THE NEW-YORK
JOURNAL OF MEDICINE,
FOR MARCH, 1852.

PART FIRST.

ORIGINAL COMMUNICATIONS.

ART. I. *Notice of some of the Medical Improvements and Discoveries of the last half century, and more particularly in the United States of America.* [Read before the Franklin Medical Society of the State of Massachusetts.] By STEPHEN W. WILLIAMS, M. D., &c., President of the Society.

[*Communicated for the New-York Journal of Medicine, &c.*]

Gentlemen, Members of the Franklin Medical Association:

IN the rapid lapse of time, on eagle wings, another year has fled. It is numbered with its fifty others of the present century, "with the years beyond the flood." It has, however, with its predecessors, left its traces of utility behind. It is my intention in this address, to point out some of the improvements and discoveries in medical science which have occurred during the last half century, and particularly in the United States of America. It is a subject fertile in important events, but were I to attempt to do much more than merely to glance at some of them, I should fill a volume rather than an ordinary discourse. For no era in the history of the world has been more prolific in improvements and discoveries, and no one has more exalted the medical character in the estimation of the world, and of ourselves, than the last half century.

At the commencement of the nineteenth century, and a few years previous, the doctrines of Cullen and Brown divided the attention of most of the learned physicians of that age. The latter never attained great notoriety either in this country or in England, while that of Cullen was almost universally adopted in both these countries. I have not time to give you in detail the characteristic features of either of the systems of these distinguished physicians. The system of one physician has frequently been the basis upon which another, with some modifications, has established his own, the first laying the foundation, the last erecting the superstructure, so that the discoveries of the first are often of equal, if not greater importance than those of the last, and without the researches of the first, the last could never have had an existence. In this way we may account for the origin of all the improvements in medicine, in science and the arts. Let us then learn to appreciate the value of the researches of the ancients, for without their investigations we should now remain in the same state of comparative ignorance with them. Pope has admirably explained it:

> "From nature's chain, whatever link you strike,
> Tenth or ten thousandths breaks the chain alike."

About the commencement of this century, the eccentric Darwin promulgated a new system of medicine in his Zoonomia, or Laws of Organic Life, for an account of which I must refer you to his writings. Few books upon the practice of medicine were to be found at this period upon the shelves even of our most eminent physicians in the country, besides the works of Cullen, Brown, Darwin, Wallis, Sydenham and Pringle. Some physicians, indeed, possessed the more elaborate works of Bœrhaave, Van Swieten, Fothergill, and a very few others. In the other branches they were equally deficient. In anatomy, Cheselden, Heister and the Edinburgh system. In surgery, Heister, Sharpe, Turner and Van Swieten. In physiology, Quincy's Medicina Statica and Heller. From twenty-five to one hundred and fifty medical books constituted our largest medical libraries. It was a subject of loud complaint, even since I can remember, that pupils frequently left

the offices of their preceptors, and commenced the responsible duties of their profession, with even less than two years' study of some of the books I have enumerated, very many without any other preliminary education than the common school.

A new era, however, just commenced a short time previous to the opening of the nineteenth century. The two oldest and most respectable medical societies in the United States, viz., the New-Jersey Medical Society and the Massachusetts Medical Society, recommended, and they could do nothing but recommend, that before a student could enter the offices of any of their members, he should have a competent knowledge of Latin, Greek and the Mathematics, and that he should afterwards study the profession of medicine three full years before commencing practice. The recommendation of the preceptor was generally the license to practice.

A very few books were published in America previous to the American revolution. Anterior to that time, there were but two medical colleges in the United States. The medical college connected with the University of Pennsylvania was established in the year 1765, just before the breaking out of the revolutionary war. In the year 1767, the medical school connected with Columbia College, in the city of New-York, was established. Both these schools were nearly suspended during the continuance of our struggles with Great Britain; the latter entirely so, and it did not commence operations again, I believe, before the year 1791. The two first degrees of Doctor of Medicine which were ever conferred in America, were given in the year 1769, in Columbia College, even before any were granted in Pennsylvania. Before this period, and even a long time afterwards, our most distinguished medical men went abroad to Europe for the completion of their medical education. The first graduations in Philadelphia were in 1792, when but seven candidates received the degree of Doctor of Medicine, and for the succeeding ten years the average number of graduates was but little more than six a year. The medical college at Boston, connected with Harvard University, was established in the year 1780, and the first degrees were conferred in 1788, upon two candi-

dates. The first medical college in New-Hampshire was established in the year 1798, by Dr. Nathan Smith, who for twelve years sustained all the offices of professors in that school. These were all the medical colleges which were established in the United States before the commencement of the nineteenth century. Probably all these medical colleges, up to the year 1800, had not graduated more than one hundred students.

But three state medical societies were in operation in the United States, previous to the year 1800, viz., the New-Jersey Medical Society, incorporated in the year 1765, the Massachusetts Medical Society, incorporated in the year 1781, and the Connecticut Medical Society, incorporated in the year 1792. These societies had the power of granting licenses for practice, which were considered equivalent to the degree of the doctorate from our colleges. Such was our situation in relation to medical schools, medical societies and medical licenses, prior to the commencement of the nineteenth century. We had, indeed, our eminent men in the profession, and men, too, who have never been surpassed in any age or country. Our immortal Rush was a host and a phalanx in himself, and well does he merit the appellation of the American Hippocrates. We, too, had our Bartrams, Barton, Rittenhouse, Redman, Wistar, Coxe, Post, Hosack, Mitchell, Miller, Warren, Jackson, Thacher, Wells, and very many others of that age, which time will not permit me to enumerate.

Between the years 1790 and 1800, very many standard and most valuable medical works were published or republished in this country. They may be considered as belonging to the commencement of the latter period. The republication of the great work of Benjamin Bell, in four volumes, with splendid plates, was considered a master production, and for more than twenty years no work was considered equal to it on surgery. Rush's Inquiries and Observations, in five volumes, octavo, have given immortal renown to its author, and are a proud trophy of American medical lore. Currie's Climate and Diseases of the United States, and his work on Fevers, Barton's Materia Medica, Davidge on Yellow Fever, Archer on Croup, Caldwell on Pestilential Diseases, Barton on Goitre, Cathral

on Black Vomit, and some others which I could mention, are among the native American works which were published within that period. Some standard English works, too, within that time, have been published in England, or republished here. One of them, the Medical Extracts, with splendid plates, in five volumes, the original price of which was twenty-four dollars.

Periodical medical works just had their commencement at the very close of the last century. Duncan's Medical Annals commenced in Great Britain, in the year 1796, and continued eight years, or until the year 1804. This was the first regular medical periodical, if we except the transactions of societies, which was ever published in Great Britain. The Medical and Physical Journal of London followed it in the year 1798, in monthly numbers. This most valuable work was taken by most of the eminent physicians in our cities, and by many in the country. I am not sure that this work is not still continued. The second periodical medical work in the English language, and the first in America, was the Medical Repository, conducted by Mitchell and Miller, and commenced in the year 1797. After passing through about twenty volumes, it was discontinued. The Philadelphia Medical and Physical Journal succeeded it in 1804, and continued through six volumes. The Philadelphia Medical Museum, commenced in 1805, and continued through seven volumes. Nineteen others were established, and had a good circulation between the years 1805 and 1827, not one of which is now published under its original name. Some appeared after that period, and are now defunct.

The following list comprises all or nearly all the medical periodicals which are now published in the United States, and they are most valuable and learned works:—the American Journal of Medical Sciences, Philadelphia; the New-York Journal of Medicine; the Charleston Medical Journal and Review, South-Carolina; the New-Orleans Medical and Surgical Journal; the Western Lancet, Cincinnati; the St. Louis Medical and Surgical Journal, Missouri; the Western Journal of Medicine and Surgery, Louisville; the North Western Medical and Surgical Journal, Chicago; the Buffalo Medical

Journal; the Philadelphia Medical Examiner; the Southern Medical and Surgical Journal, Georgia; the New-Hampshire Journal of Medicine; the Medical Gazette, New-York; the Boston Medical and Surgical Journal; the New-Jersey Medical Reporter. In the collateral branches, the American Journal of Insanity; the American Journal and Library of Dental Science, and the splendid work by Carson, with colored plates, of American Medical Botany. The reprints of periodical medical works in this country, of inestimable value, are the British and Foreign Medico-Chirurgical Review; the London Lancet; Baithwaite's Retrospect and Ranking's Abstract; last and best of all American production, the Transactions of the American Medical Association. These periodicals contain the very essence of all the improvements in medicine and surgery. No library can be considered complete or very valuable, which has not copies of one or more of these journals on its shelves. These publications give you the substance of almost every work in our profession, and keep you fully up with all the improvements and discoveries of the times. I consider good medical journals the best possible books for all times, which can be or are published. Their reviews of medical books alone, give an account of almost all the facts of importance which the books contain themselves. Let us not, therefore, consider medical periodicals as useful only for the present day; they are the books for ages. What would we not give to see medical periodicals, from the commencement of our profession as a science, to the present time?

When I commenced the study of medicine in 1808, almost the only work on anatomy in any of the libraries of most of the physicians in the country, was Cheselden's, which we used to recite till we got the contents of it almost to the ends of our tongues. In fact, this was almost the only work on anatomy which had ever been published or republished in this country. A few of our physicians had Heister's Anatomy and the Edinburgh system, in three volumes. Soon after appeared the splendid work of John and Charles Bell upon this subject, in four volumes, with plates. This has since been republished in this country, with notes by the ever to be lamented Godman. Fyfe's Anatomy was published about the

same time, and soon after Wistar's Anatomy, by our learned countryman. Then followed Horner's works on Special Anatomy and Histology, Godman's and Parson's Anatomical Investigations. These were all by our own countrymen. Very fine publications or republications of great value appeared in a short time from this period; such as Brichat's General Anatomy, by Hayward; Meckel, in three volumes, by Doane; Bayle, by Gross; Maygrier, by Bedford; the Elementary Treatise, by Paxton; Cloquet, by Knox; the great work of Cruveilhier, by Madden, with folio colored plates, the price of which is more than one hundred dollars; Wilson's Manual and Von Behr's, not forgetting the inestimable work of Morton, and his Crania Americana; the elegant plates of Quain and Wilson; the Atlas of Smith and Horner; the Atlas of Masse; the plates of Salandier; and the large figures of Manec; and the illustrations of Goddard, Neill and Allen; the Regional and Surgical Anatomy of Edwards, Velpeau and Blandin, which have all been republished in the United States, show to what an extent the science of anatomy has advanced in this country, and these works almost supersede the necessity for dissections.

In Physiology, at the commencement of this century, we had few works beyond Haller and Quincy. Now our country is almost flooded with works of this description. I need only mention the works of Richerand, Oliver, Dunglison, Muller, Carpenter, Todd, Bowman, Roget, Combe, Harrison, Hayward, Lee, Coates, Griscom and Jarvis. These are but a part of the writers on this subject.

In Surgery, the most important original American treatises, besides what are to be found in monographs and papers in our journals, are those of Dorsey, Nathan Smith, Gibson and McClellan; while reprints of Benjamin, John and Charles Bell, Hunter, Pierson, Abernethy, the Cooper's, Travers, Brodie, Guthrie; and last, not least, the magnificent work of Velpeau, by Mott, the greatest living surgeon in the world, in three volumes, of more than three thousand pages, and a splendid atlas; also, the lectures of Dupuytren, Lisfranc and Lallemand, the excellent works of Chelius, Liston, Fergusson and Miller, besides innumerable on special surgical diseases,

not the least of which are the works of our distinguished countryman, Dr. Warren, on Tumors, Bushe on the Rectum, Parish on Hernia, Anderson's Surgical Anatomy, Smith's Surgical Anatomy of the Arteries, Pancoast's Operative Surgery, Darrach's drawings of the Anatomy of the Groin, &c., &c. I have only referred to some of the most prominent among the hundred of works on Surgery, which are now to be found on the shelves of our enterprising booksellers, and in the public and private libraries of our distinguished American physicians.

In the Practice of Medicine, no longer ago than the year 1808, we thought ourselves fortunate if we had any more modern works than Van Swieten, Bœrhaave, the Medical Extracts, Cullen, Darwin, Brown, and the medical periodicals of the time. Many had not even the advantages of these. I recollect the time when I hailed with enthusiasm the appearance of Thomas' Practice, with notes by Hosack. It was considered a wonderful work, and it now has passed through four or five editions. It was soon after that this work, erudite as it was, was seen to be falling into the back ground, and that it did not keep up with the great discoveries of the age. A republication of Gregory, with notes by an American physician, soon after appeared; then the work of Eberle, our distinguished countryman. This was succeeded by Dewees, one of the most distinguished obstetricians in America. McIntosh's Practice, with notes by Morton, was published about the same time; then the work of Bell and Stokes upon the same subject, and of Graves; then the Library of Practical Medicine, in five volumes, large octavo; then the Medical Cyclopædia, in four volumes. Watson's Practice; the great work of Copland, now in process of publication, but which I am apprehensive none of us will ever see the end of. Should it ever be finished, it will be the best compend of medical practice ever published. The learned work of Wood is now considered the standard of professional knowledge, in two large octavo volumes. Were I to attempt to enumerate all the works upon the practice of physic, which have appeared within the last twenty-five years, I should extend my list indefinitely.

In Materia Medica I cannot omit to mention the great work of Pereira, which is a cyclopædia upon this subject of itself, and has been republished in this country, of Dunglison, Barton, Coxe, Wood, Bache, Ellis, Paine, Harrison, Beck, Carpenter, and many others.

In Midwifery, the works of Dewees, Bard, Meigs and Tucker, among our native treatises. The splendid work of Moreau, with notes by Goddard, Maygrier, with plates, Velpeau, by Meigs, Chailly, by Bedford, are republications in this country, as well as the works of Denman, Burns, Maunsell, Collins, Lee, Churchill, Ramsbotham, Blundell and Ryan.

In Pathological Anatomy, which is now attracting so much attention in our profession, we have the works of Horner, Gross, J. B. S. Jackson and Stillé, of American origin, besides the works of Baillie, Andral, by Townsend, Rakstansky, by Peters, and the works of Mayo, Vogel and Hasse.

In the other branches of our profession, I can only mention a few of the most important, some of which have been republished here, and some are original. Among the former are Hufeland, and Lugol, by Doane, on Scrofula; of Andral on the Blood, by Meigs and Stillé; of Clymer, Willis, Bird and Prout, on the Urinary Organs; Carmichael, Ricord and Acton, on Venereal Affections; Rush, Ray, Esquirol, Combe, Millengen, Woodward and others, on Insanity; Rush's Pringle on the Diseases of the Army; Johnson and Martin on Tropical Climates; the splendid works of Bigelow, Barton and Carson, with colored plates, which are sufficient to give immortal renown to the authors and our country. Forry on Climate, and the great work of Drake on the Diseases of the West, must not be forgotten in this enumeration; nor the Cyclopædia of Practical Medicine, commenced in Philadelphia in the year 1835, which, when finished, will be a medical library complete in itself.

These are but a tithe, a drop in the bucket, in comparison with the whole number of medical works which have issued, and are daily issuing from the American press. I merely mention what I have named to show the progress of American medical literature even within the last twenty-five years,

and they are published at so cheap a rate that no physician can be justified without filling his shelves with the most important of them; as they are altogether the best, and in fact, they are almost the only guides to correct and judicious medical practice at the bedside of the sick. A physician without the standard medical works of the day, and without some of the important medical periodicals of the time, by which alone he can keep pace with the improvements of the age, is like a mechanic without tools. The late Dr. Hosack, of New-York, who, next to Dr. Rush, was in his day one of the most eminent physicians in America, never made a truer observation than the following: "No physician can accurately remember all the details of his practice more than three years." What a cutting rebuke is this upon those who pretend to practice physic upon experience alone, and who decry the use of books, like many of our modern wiseacres. Of how much importance then is it, that the libraries of our physicians should contain the best, and be replenished with the latest books in our profession? Diseases are constantly assuming new types and characters, and new books alone will accurately describe them. The physicians in Boston are generally acknowledged to be among some of the best practitioners in the United States. With pride and exultation I heard it asserted by the committee on medical education in the American Medical Association, which had its session in Boston, in 1849, that there were private individual libraries there containing more than five thousand volumes. These libraries, I know, are owned by the most eminent practitioners in that city. The library of the venerable Dr. John Redman Coxe, of Philadelphia, likewise one of our best practitioners, contains more than fourteen thousand volumes, principally of medical books. A medical library can never be too large for a practising physician. Good medical books are certainly the best counsellors in cases of anxiety and doubt. Every physician, however large his business, has time to consult his books in the intervals of his practice. I know it is customary for certain interested individuals to decry the physician who devotes much of his attention to his studies, as a book-worm, and as a theorist, learned, but without judgment to apply his learning at

the bedside of his patient. But this idle allegation is only made by those who are too indolent to study themselves, and who are nothing but drones in the profession. The public rightly appreciate the slander and the motive. I am happy to be able to state, that there are private medical libraries, owned by physicians in this county, of from one hundred to one thousand volumes.

I have already mentioned, that at the commencement of the nineteenth century, but four medical colleges, or public medical schools, had been established in the United States, viz., the Medical University of Pennsylvania, the medical school of Columbia College, New-York, the medical school connected with Harvard College, and the medical school at Dartmouth College, established by Dr. Nathan Smith. No other medical school was established in the United States until the year 1806, when the Medical University of Maryland was opened at Baltimore. Now, more than forty respectable medical colleges are in successful operation in the United States; and every year augments the number. Of these, two are in Vermont, one in Maine, one in New-Hampshire, two in Massachusetts, one in Connecticut, six in New-York, four in Pennsylvania, two in Maryland, one in the District of Columbia, three in Virginia, one in South Carolina, one in Georgia, one in Louisiana, one in Tennessee, two in Kentucky, three in Ohio, two in Indiana, two in Illinois, two in Missouri, two in Wisconsin and one in Iowa. Seven of these are in New-England, ten in New-York and Pennsylvania, eight are in the Southern States, fifteen in the Western States, most of which, forty-five years ago, were only a howling wilderness, and had only been trodden by the footsteps of the savage Indian, prowling for prey, and of the beasts of the forest.

At these schools are taught the following branches: Institutes of Medicine, Theory and Practice of Physic, Institutes and Practice of Surgery, Materia Medica, Medical Botany, Medical Jurisprudence, General, Descriptive and Surgical Anatomy, General Therapeutics, Midwifery, Diseases of Women and Children, Clinics and Chemistry. None of these have a term of less than four months duration, and many of them have adopted the regulation suggested by the American

Medical Association, of a term of six months. There can be but little to choose between any of these schools. For the degree of the doctorate, they all require that the student, before commencing the study of his profession, shall be well acquainted with the English and Latin languages, and shall have a knowledge of Mathematics and Natural Philosophy; that he shall have studied three full years, including the time of lectures, with some regular practitioner of medicine; that he shall have attended two full courses of lectures in some of the accredited schools of medicine in the country, and shall have passed through a regular examination before the college faculty of medicine, and a board of censors, and shall have read and defended a dissertation on some medical subject. Scarcely a greater requirement is demanded at any European Medical College, and certainly I believe that no greater facilities or opportunities for procuring a medical education can be obtained in Europe, than in the United States. If our young men now go abroad to pursue their medical studies, it may be more for the name of so doing, than for any real utility. If we continue to improve for the next fifty years, as fast as we have during the last half century, it will not be surprising, if it is as customary for European medical students to resort to America for the completion of their education, as it has heretofore been for American students to resort to Europe.

It has been supposed by many, that the multiplication of medical schools in the United States was an evil greatly to be deplored, as that thereby the facilities for obtaining a medical education would be so great, that the standard of medical knowledge would be lowered, and that the country would be flooded with half educated physicians. Let us examine this subject. In forty medical schools in the United States, there probably attend annually about four thousand pupils, or, on an average, one hundred students to each school, which I believe is not far from the fact. It is supposed that at least one quarter of these receive the degree of the doctorate in each year. There are in the United States about twenty-five millions of inhabitants at the present time. It is supposed that about one physician is required for about one thousand

inhabitants, which is a small estimate. This will give twenty-five thousand physicians to the population of the country. If the increase should be as great for the time to come as it has been for a few years past, one million of inhabitants will be annually added to our population, which will require one thousand physicians more a year, at the rate we have estimated, just about as many as now graduate. So that our forty schools can now be well sustained, and it will have room for the erection of many more new schools, which will undoubtedly be established and supported.

When the Berkshire Medical Institution was established, in the year 1823, which was the fourteenth medical school organized in the Union, a hue and cry was raised against it in Boston and elsewhere, stating that the school was not needed, and that the multiplication of medical schools tended to increase empiricism; and an attempt was made to take away from her some of the privileges which were awarded to Harvard Medical College. The attempt was not successful. Berkshire went on her way rejoicing; and she has always kept pace with her rival at Boston in the number of her students, and her requirements for the doctorate have always been the same with those of Harvard. Some years she has even had more students than the school at Boston. It is now almost universally acknowledged that as good a medical education can be obtained at Berkshire, as at Boston. There was the same opposition to the Jefferson Medical College, at Philadelphia, by the University of Pennsylvania; and although by many the University has been considered the best medical school in the Union, it is now generally acknowledged that Jefferson Medical College is in every respect equal to her, both in point of numbers and requirements. These remarks show that our medical schools are not increasing too rapidly.

I have mentioned, that at the commencement of the present century there were but three state medical societies in existence in the United States, viz., the New-Jersey, Massachusetts and Connecticut Medical Societies. Several others were established previous to the year 1840, and, among the rest, the New-York, the New-Hampshire, Vermont, Rhode Island,

Tennessee and Ohio state medical societies, and some others which do not immediately occur to me. Their multiplicity did not increase with the medical schools, though few questioned their utility. Between the years 1825 and 1840, there was some discussion about the propriety of establishing a national medical society, which should embrace among its members some of the most respectable physicians in all the states of the Union, the object of which should be to form a bond of union between all the regular physicians and medical societies and schools in the United States, and agree upon a regular system of education, and a uniformity of action and acquirements. An attempt was made for this purpose in the year 1827, and a New-England convention of physicians was held at Northampton, Massachusetts, that year, composed of delegates from the New-England states, which recommended a set of resolutions to the several states in the Union, which were not adopted. In the year 1845, the Medical Society of the state of New-York issued circulars to all the medical colleges and regular medical societies in the United States to meet, by delegates, in convention, in the city of New-York, in May, 1846, for the purpose of establishing a national medical society. One hundred and nineteen delegates assembled in that city on the 1st of May, 1846, from fourteen different states. Committees were appointed upon various subjects, and one for drafting a constitution and laws for the society, who were to report at an adjourned meeting, which was to be held at Philadelphia, May, 1847, at which meeting nearly four hundred members attended from twenty-three states, and from almost all the medical colleges and societies in the Union. A constitution and by-laws were adopted by that body, and the establishment at that time of the American Medical Association is the proudest era in the annals of American medical history. It is now patronized and sustained by eminent members of the profession, from every state medical society, and from almost every other eminent medical society and medical college in the Union. It already numbers more than one thousand members, from Texas to Maine, and its numbers are annually increasing. Every regular medical society throughout the Union is en-

titled to one delegate in it, for every ten members, and an additional one for every fraction of more than half this number.

Among its committees is one on the medical sciences, who are annually to report on the progress of improvements in medical science in America; one on practical medicine, who are to report on all the improvements in the practice of our profession, during the year; one on surgery, who are to report on all the discoveries and improvements in surgical diseases during the year; one on obstetrics, who are to report on midwifery and the diseases of women and children; one on medical education, who shall report on the general condition of medical education in the United States, in comparison with the state of medical education in other enlightened nations; one on American medical literature, who shall prepare an annual report on the general character of the periodical medical publications of the United States, in reference to the more important articles therein presented to the profession, on original medical publications, on medical compilations and compends by American writers, on American reprints of foreign medical works, and on all such measures as may be deemed advisable for encouraging and maintaining a national literature of our own; one on indigenous Medical Botany and Materia Medica, to give an account of the medicinal plants and substances found in our country; and one on American Medical Biography, giving some account of the eminent deceased physicians of our country. It will be seen by the above, that an attention to these subjects will give a complete medical history of all the medical improvements and discoveries which are made in our country during the year. Already four volumes of its transactions have been published, containing an account of every important improvement and discovery in our profession, which has been made within the last four years. They form decidedly the best periodical work ever published in America, and a copy of them should be in the hands of every physician in the country. The society is itinerant, and is to hold its meetings in the principal cities in the Union, as agreed upon by the members. It has already met in New-York, Philadelphia, Baltimore, Boston, Cincinnati, Charleston, South-Carolina,

and is this year to hold its session in Richmond, Virginia. Its Presidents have been some of the most distinguished medical men in America, viz., Dr. Jonathan Knight, of New-Haven, Dr. Nathaniel Chapman, of Philadelphia, Dr. A. H. Stevens, of New-York, Dr. John C. Warren, of Boston, Dr. Reuben D. Mussey, of Cincinnati, and Dr. James Moultrie, of Charleston. Its members, principally delegates from medical societies and colleges, are certainly among the most eminent men in the United States, which is a sufficient guarantee for the perpetuity and usefulness of the institution.

From the brief and very imperfect sketch of the progress of medical science, medical literature and medical institutions in the United States, in the last half century, I proceed to give a slight account of some of the brilliant discoveries in the science of medicine,—discoveries which have exalted the medical profession, I may say with confidence, above that of any other of her sister professions. Among the first and most brilliant of all, was the discovery of the efficacy of vaccination against the ravages of small pox, by Dr. Edward Jenner, of England. Although the discovery was made and tested at the very close of the last century, yet the full benefit of it did not accrue to the public till after the commencement of the nineteenth century. It was not introduced into the United States, as a prophylactic against the small pox, till about the year 1802, when the venerable Dr. John Redman Coxe, who is now living, and Dr. Benjamin Waterhouse, introduced it in this country.

It is not necessary, in an audience like this, to say any thing about the origin of the discovery, or to give a history of its immortal discoverer. These things must be familiar to you all. It may be sufficient to say, that previous to this century, the ravages of small pox were considered to be vastly greater throughout the world, than those of the plague and all other pestilential diseases. Many hundred thousand people annually fell victims to this terrific destroyer. No longer ago than the year 1614, the small pox occurred universally, and it was never known before to be so fatal. It almost laid waste, Corte, Alexandria, Calabria, Turkey, Venice, Italy, Dalmatia, Germany, France, England and Poland.

At a later period, no longer ago than 1838, it nearly annihilated great numbers of Indian tribes at the west, who had not known, or had not availed themselves of the great discovery of Jenner; the Mandans, the Gros Ventoras or Minictons, the Ricas, the Black-feet, the Assimboins, the Winnebagoes, the Sioux, the Choctaws and Chickasaws, numbering at that time, many thousand souls, were all that year almost entirely annihilated by it. For a long while previous to the introduction of vaccination in Ceylon, the small pox annually carried off, according to the most moderate calculation, a ninth part of the population. The proportion of those who died from it in the natural way, was one in four and a half.

Even in small pox, inoculation, under the best plan of cure, about one in thirty die. The small pox, in consequence of the great discovery of Jenner, is now in a great measure disrobed of its terrors, and the average duration of human life is extended two years, or from thirty to thirty-two years, by it. Can any other discovery on any other subject, in point of universal utility, be considered at all comparable to it? Even the great improvements and discoveries by steam and by the electric telegraph, sink into comparative insignificance by the side of it.

True it is, that we may not yet have made all the discoveries and improvements in relation to vaccination which the subject will admit, yet it cannot be doubted that this is one of the most *wonderful* and *great* of all discoveries, and must stand as such in the records of medicine.

So short has been the period since the time of its discovery, that the profession and the public have not, till recently, been aware that one inoculation has not been sufficient entirely to prevent a disease somewhat resembling the small pox, and one which will actually communicate the genuine small pox. The varioloid, however, is considered to be comparatively a harmless disease, scarcely any one ever having died from it. This does not at all detract from the value of vaccination, for it has been demonstrated beyond a doubt, that revaccination once in a few years, is an entire and absolute preventive of the small pox, and that the cow pox is still as efficacious as ever. The same is true of the inoculated small pox, and even

of the small pox in the natural way. The patient having had the small pox in either way, is equally liable to that species or modification of the small pox, the varioloid, as the one which has been vaccinated, and the longer the period of time which has elapsed since the inoculation either with the matter of small pox or cow pox, the more severe will be the symptoms of the varioloid when taken. Vaccination will entirely prevent the small pox for many years, and will modify it for a long time to come. Revaccination, frequently repeated, will entirely eradicate it from the system. The discovery of Jenner, therefore, stands as brilliant and useful as ever, and in the process of time will probably eradicate that loathsome disease, the small pox, from the earth. It is not an anomaly in the history of contagious diseases, that the small pox can be taken the second time. We have, most of us, seen cases of secondary whooping cough and scarlet fever.

Without paying much regard to chronological order as to process of time, we may be allowed to mention the importance of the discovery of the nitrous acid fumigations for destroying the contagious effluvia of putrid, pestilential and contagious diseases, particularly putrid fevers and plague in tropical climates, and particularly on ship-board. For this invaluable discovery, the British government awarded to Dr. James Carmichael Smith, F. R. S., several thousand pounds sterling. Fever and plague had heretofore been considered the two greatest outlets of human life. Indeed, except the small pox, plague was considered to be the greatest scourge of the human race, and to be productive of greater mortality than any other known complaint. Since the promulgation of this great prophylactic, this direful malady and putrid fever, in all their direful and mortal forms, are disrobed of half their terrors, and commercial adventurers now fearlessly whiten every sea with their canvas, and the dread of contagion no longer deters our enterprising merchants from visiting the oceans of the torrid zones, and returning triumphantly with the rich products of those hitherto pestilential climes. The plague is now, in a great measure, owing to the employment of disinfecting agents, almost entirely banished from the face of the earth. The two discoveries of vaccination and the

nitrous acid fumigation, are sufficient to give immortal renown to the science of medicine, and have greatly increased the average duration of human life. Both these discoveries have been made within half a dozen years of the commencement of the present half century, and may well come under that epoch of time. Let us hope and believe, that within a shorter period of time, a remedy will be discovered by the scientific investigations of our eminent physicians, which will arrest the progress, and annihilate the ravages of that fell destroyer of the human race, the cholera.

Connected with the discovery of the nitrous acid fumigations, should be mentioned the disinfecting agent of Labarraque, the chlorides of lime and soda, though promulgated at a later period. By means of these agents, the human and animal putrefaction process is arrested, and loathsome decomposing effluvia from putrid animal substances is rendered entirely innocuous. The most loathsome, disgusting and fermenting animal matter is rendered sweet and harmless by these substances. The sources of disease are thereby cut short by them, and physicians are enabled to pursue their anatomical investigations, both in morbid and special anatomy, without disgust or danger. At a later period still, the disinfecting fluid of Ledoyen, composed principally of the chlorides of zinc and lead, may be mentioned perhaps with equal honor.

Nor should we pass over the discovery within this period of the efficacy of the malt and charcoal poultices in arresting the progress of gangrene and mortification in the living subject. Thousands of limbs, as well as lives, have been saved by the timely application of these almost divine remedies.

The use of cold water, too, in the treatment of many diseases, and particularly of febrile complaints, was revivified, if not promulgated by the immortal Currie, not far from the year 1797. Previous to his time many patients in fevers were sacrificed by confining them in hot unventilated rooms, and sweating them under blankets and bed-clothes, to induce perspiration, which was supposed to be almost the only outlet by which disease was driven from the system. This method of treating febrile diseases in the hot stage, by cold effusions

and the shower bath, show that the cold water douches of the hydropathists of the present day, is no modern invention, and was in use long before Presnitz entered upon the scene of action. True it is, that the use of cold water is a most invaluable agent in the cure of many medical and surgical complaints, and no class of men more highly estimate it, when rightly employed, than regular physicians; but when hydropathy is made an exclusive system of practice, and is proclaimed by its admirers to be an infallible remedy in the cure of all diseases, and especially when it is connected with that phantom of the brain termed homœpathy, it is a most dangerous species of empiricism and quackery, which, like all its kindred delusions, will have its little day, and die and be forgotten like Perkins Tractors, and Mesmerism.

I am a strong advocate for the use of cold water in many diseases, but when, as I have seen it in many complaints, induce most severe rigors, and metastasis to important vital organs, I am satisfied it does more harm than good, and that many patients have been hastened by it to their "dark and narrow house," and I very much fear that it will yet hurry thousands of deluded victims to an untimely grave. It is to the exclusive empirical use and abuse of it that I object, and not to the judicious employment of it; I condemn the administration of it as an exclusive system of medicine, while I hail the judicious use of it as one of the great medical improvements of the last half century.

The use of the air-pump vapor bath in the cure of many chronic complaints may be mentioned as one of the improvements in medicine in the period of which I am speaking. The application of steam to paralytic and contracted limbs, and other chronic affections, through the medium of Smith's air-pump vapor bath, was first promulgated by Smith and Blegborough, of England, as long ago as the year 1802, and the great utility of it has been tested and acknowledged by many of the most scientific physicians in the world. In many cases of sprains, bruises and local pains, I have no doubt that steaming, or steeping, to make use of an obsolete term, is vastly more efficacious and safe than cold water applications. The effects, immediate or remote, are often more

soothing and salutary than the more chilling use of cold water and refrigerants. In cases of severe bruises and dangerous accidents, the vital current is often so lowered that the patient is surrounded almost by the chilling embraces of death. Reaction must be restored immediately, or the vital current will be for ever annihilated. This is always the case in suspended animation, from whatever cause it may occur. This, with artificial breathing, is the only means by which vitality and animation can be restored. In many instances a resort to the lancet may be prevented by it.

It might have been from seeing the good effects of this, that that noted empiric, Samuel Thompson, promulgated his infamous system of curing all diseases by means of Lobelia and steam. Let not, however, the regular practice of medicine be accused of aiding that nefarious and murderous practice in consequence of a valuable discovery in our profession by regular physicians. As well may we impute the phantom of the infinitesimal doses of nothing of the homœpathists to the discoveries of Louis and Broussais, because they make use of little else in gastro-enteritis and fevers than a little gum-water and leeching. It remains, however, to be proved, whether the physiological system of the French physicians is in fact an improvement or not. Of one thing I am certain, the practice is not generally adopted by American physicians in these cases.

The concentration of some of our invaluable medical agents, by means of chemical discoveries, is not the least important improvement of the age. We now generally employ the preparations of bark, opium and many other articles, under the forms of sulphate of Quinine, the sulphate and acetate of Morphine, and very many other articles. A few grains of these substances contain ounces of the original articles from which they were prepared. A grand desideratum, this, where smallness of dose is of consequence. Of so much importance did the French government consider this discovery, long after the commencement of the present century, that they awarded to Monsieurs Pelletier and Cavanton the sum of ten thousand francs for it. This was in a measure owing to the great light which chemistry has thrown upon the preparations of medi-

cine, independent of the brilliant light which has been shed upon the science of medicine by means of the great discoveries in organic chemistry. It would occupy too much of my discourse to enter into a detailed account of the progress of these discoveries. I cannot, however, pass over the great discovery of Sir Humphrey Davy, in demonstrating to the world the fact of the compound nature of soda and potass, from which proceed the metals of sodium and potassium, resembling lead in their structure and appearance, which inflame upon exposure to the atmosphere, and which can only be preserved in liquid naptha. Many of the previous principles and theories of chemistry have been overturned by these brilliant discoveries of Davy.

To Dr. John Stearns, of Albany, we are indebted for the discovery of the Ergot of Rye as an ecbolic and promoter of parturient pains in the process of labor in midwifery. This, next to chloroform and the anæsthesia in labor, of which I shall shortly speak, I consider to be one of the greatest discoveries in abridging the tortures of parturition which has yet been promulgated. In many cases this divests the pains of labor of half their duration, and in many cases prevents a resort to the disagreeable necessity of the application of instruments. Too much cannot be said in its praise. Its utility in preventing and arresting uterine hemorrhage, and its value as an emenagogue, are too well known to the profession to need a repetition here. Dr. Stearns promulgated this great discovery in 1809, and won immortal honor by it.

I ought not to omit to mention, in this place, the discovery of the Hive Syrup, by Dr. John Redman Coxe, of Philadelphia, in the year 1811. By the timely application of this most invaluable remedy in one of the most distressing and wide-spread maladies among children in the United States, thousands have been rescued from an untimely grave. The profession is under the deepest obligation to Dr. Coxe for promptly promulgating the formula for the preparation of this most valuable, I had almost said specific, but that term should be banished from the vocabulary of physicians. How different has been the proceedings of Dr. Coxe in relation to this subject, from many pretended regular physicians who have

boasted to have discovered panaceas for the various ills of human life, and have kept their boasted remedies secret! The disgraceful recommendations of respectable clergymen, who are as ignorant of the properties of the articles they recommend as the benighted Hottentot, has greatly tended to perpetuate the evil in society. The medical public now, however, frown with contempt upon such interference, and they consider it as unjust in them to interfere in matters in relation to our profession, as it would be for us to interfere in their business in relation to church government. It is hoped that popular medical indignation upon such procedures will hereafter prevent such interference in relation to empirics and quack medicines.

Dr. Physic, of Philadelphia, first recommended the use of blisters in arresting the progress of mortification, in 1804. This has enabled the surgeon to amputate a limb with safety, while before it was considered fatal thus to operate, as it was thought that mortification would, after that, invariably strike the stump and destroy the patient. I perceive of late that amputation has been successfully resorted to in mortification, even before the line of demarcation had been formed. This same distinguished surgeon, about the same time, discovered and promulgated the efficacy of setons in inducing union of ununited fractures, a discovery of no little importance.

The radical cure of hydrocele, by injections, first adventured by Earle, in the early part of this century, is deserving of honorable notice. It supersedes the necessity of resorting to the formidable operation of incision, and removing a portion of the tunica vaginalis.

The operation of staphyloraphia, or uniting the cleft palate, which so often occurs in cases of hair-lip, was first performed by Graefe, of Berlin, in the year 1814. It has since been improved upon by Dieffenbach, and it is now frequently performed with success. Nearly allied to this is the Taliacotian operation, sometimes called rhinoplasty, by which lost portions of the skin, or of the dermoid substance, are restored, and cicatrices are removed by displacement from the sound skin of the neighboring parts. Even entirely severed portions of the body, such as large portions of muscle and skin, and the

fingers and toes, have been restored to their normal state, and useful functions. It is a discovery of the last half century, as is that of tenotomy, by which distortions of the neck, club-feet and strabismus are obviated and cured. Formerly it was supposed, that in a wound of the tendon, there was the utmost danger of tetanus or lock-jaw. Now tendons are severed with as little danger as muscle, or any other part of the human body.

The various apparatus, too, for extending and keeping in place distorted and fractured limbs, let the abnormal condition be from whatever cause, may be mentioned with pride and triumph, as the discoveries of the present age. We cannot too highly extol the institutions of our country which are devoting their energies to the restoration of distorted limbs, which would otherwise render the subjects cripples for life. I would, also, take occasion to mention in this place the apparatus of Dr. Smith, of Baltimore, for the treatment of fractures of the lower extremities, and of Jarvis' Surgical Adjuster. I should do injustice to the claims of B. R. Palmer, though not a surgeon or physician, for his discovery of his artificial leg, which almost supplies the place of a natural one, with its springs, and which is now eliciting the wonder and admiration of the most distinguished surgeons in Europe. Truly, in this age of wonders, we may exclaim, in the language of Pope,—

> "The dumb shall speak, the lame his crutch forego,
> And leap exulting like the bounding roe."

We may, also, here be permitted to mention the discovery and invention of the adhesive straps of Baynton and Horner, in the cure of the inveterate ulcers and sore legs of old people, and also of vitiated constitutions. Adhesive plaster, too, within this period, has almost done away with the use of the needle and the suture, even in cases of the largest wounds.

The operation of removing the lower jaw at the tempero-maxillary articulation, for ostro-sarcoma or cancerous degeneration of the bone, was first performed in America, and in the world, by Dr. Mott, as early as the year 1821. It has since been frequently performed by various surgeons in the

United States and in Europe. Some surgeons are in the habit of tying the carotid arteries previous to the operation, some are not. Dr. Mott, who has performed the operation more frequently than any other surgeon, once performed it without tying it, and came near losing the patient from hemorrhage. He afterwards wrote me, that in similar operations he always tied the artery previous to the operation of the amputation of the jaw, and that he considered it altogether the safest course, and one which he shall always adopt. This is certainly the highest surgical authority. Other surgeons have, however, successfully performed this operation without tying the carotid. Large portions of the upper jaw, too, have often been amputated with success, for this terrible complaint. Unfortunately, however, so many of these cases prove ultimately fatal, that many surgeons refuse to perform the operation at all, on account of the contamination of the system by the virus. As in the scirrhous breast, too many of the operations are too long delayed, and the operation becomes unnecessary and useless; so of ostro-sarcoma of the jaw and other bones. It cannot, however, be denied, that the operation both upon the jaw and breast, is sometimes successful; and it should not, therefore, be entirely abandoned, though it should be performed much less frequently than formerly.

The discovery of Lithontripsy, or a method of removing the stone from the bladder, by the method of crushing and grinding to minute fragments within that organ, so that they may be scooped out and washed away, without a resort to the terrific operation of lithotomy, was the invention of Mons. Civiale, of France, within the present half century. Of so great magnitude and importance did the Academy of the Sciences in France consider the greatness and value of the discovery, that they awarded him the sum of ten thousand francs for it. This operation, with the improvements upon it by Herteleup, is now in very general use, both in this country and Europe, though the veteran and distinguished surgeon, Dr. Dudley, of Lexington, Kentucky, still adheres to the old operation of lithotomy, and he has performed that operation successfully more than two hundred times. Perhaps the discovery of the operation by Civiale was induced by the fact that Colonel Hugh

cine, independent of the brilliant light which has been shed upon the science of medicine by means of the great discoveries in organic chemistry. It would occupy too much of my discourse to enter into a detailed account of the progress of these discoveries. I cannot, however, pass over the great discovery of Sir Humphrey Davy, in demonstrating to the world the fact of the compound nature of soda and potass, from which proceed the metals of sodium and potassium, resembling lead in their structure and appearance, which inflame upon exposure to the atmosphere, and which can only be preserved in liquid naptha. Many of the previous principles and theories of chemistry have been overturned by these brilliant discoveries of Davy.

To Dr. John Stearns, of Albany, we are indebted for the discovery of the Ergot of Rye as an ecbolic and promoter of parturient pains in the process of labor in midwifery. This, next to chloroform and the anæsthesia in labor, of which I shall shortly speak, I consider to be one of the greatest discoveries in abridging the tortures of parturition which has yet been promulgated. In many cases this divests the pains of labor of half their duration, and in many cases prevents a resort to the disagreeable necessity of the application of instruments. Too much cannot be said in its praise. Its utility in preventing and arresting uterine hemorrhage, and its value as an emenagogue, are too well known to the profession to need a repetition here. Dr. Stearns promulgated this great discovery in 1809, and won immortal honor by it.

I ought not to omit to mention, in this place, the discovery of the Hive Syrup, by Dr. John Redman Coxe, of Philadelphia, in the year 1811. By the timely application of this most invaluable remedy in one of the most distressing and wide-spread maladies among children in the United States, thousands have been rescued from an untimely grave. The profession is under the deepest obligation to Dr. Coxe for promptly promulgating the formula for the preparation of this most valuable, I had almost said specific, but that term should be banished from the vocabulary of physicians. How different has been the proceedings of Dr. Coxe in relation to this subject, from many pretended regular physicians who have

boasted to have discovered panaceas for the various ills of human life, and have kept their boasted remedies secret! The disgraceful recommendations of respectable clergymen, who are as ignorant of the properties of the articles they recommend as the benighted Hottentot, has greatly tended to perpetuate the evil in society. The medical public now, however, frown with contempt upon such interference, and they consider it as unjust in them to interfere in matters in relation to our profession, as it would be for us to interfere in their business in relation to church government. It is hoped that popular medical indignation upon such procedures will hereafter prevent such interference in relation to empirics and quack medicines.

Dr. Physic, of Philadelphia, first recommended the use of blisters in arresting the progress of mortification, in 1804. This has enabled the surgeon to amputate a limb with safety, while before it was considered fatal thus to operate, as it was thought that mortification would, after that, invariably strike the stump and destroy the patient. I perceive of late that amputation has been successfully resorted to in mortification, even before the line of demarcation had been formed. This same distinguished surgeon, about the same time, discovered and promulgated the efficacy of setons in inducing union of ununited fractures, a discovery of no little importance.

The radical cure of hydrocele, by injections, first adventured by Earle, in the early part of this century, is deserving of honorable notice. It supersedes the necessity of resorting to the formidable operation of incision, and removing a portion of the tunica vaginalis.

The operation of staphyloraphia, or uniting the cleft palate, which so often occurs in cases of hair-lip, was first performed by Graefe, of Berlin, in the year 1814. It has since been improved upon by Dieffenbach, and it is now frequently performed with success. Nearly allied to this is the Taliacotian operation, sometimes called rhinoplasty, by which lost portions of the skin, or of the dermoid substance, are restored, and cicatrices are removed by displacement from the sound skin of the neighboring parts. Even entirely severed portions of the body, such as large portions of muscle and skin, and the

fingers and toes, have been restored to their normal state, and useful functions. It is a discovery of the last half century, as is that of tenotomy, by which distortions of the neck, club-feet and strabismus are obviated and cured. Formerly it was supposed, that in a wound of the tendon, there was the utmost danger of tetanus or lock-jaw. Now tendons are severed with as little danger as muscle, or any other part of the human body.

The various apparatus, too, for extending and keeping in place distorted and fractured limbs, let the abnormal condition be from whatever cause, may be mentioned with pride and triumph, as the discoveries of the present age. We cannot too highly extol the institutions of our country which are devoting their energies to the restoration of distorted limbs, which would otherwise render the subjects cripples for life. I would, also, take occasion to mention in this place the apparatus of Dr. Smith, of Baltimore, for the treatment of fractures of the lower extremities, and of Jarvis' Surgical Adjuster. I should do injustice to the claims of B. R. Palmer, though not a surgeon or physician, for his discovery of his artificial leg, which almost supplies the place of a natural one, with its springs, and which is now eliciting the wonder and admiration of the most distinguished surgeons in Europe. Truly, in this age of wonders, we may exclaim, in the language of Pope,—

> "The dumb shall speak, the lame his crutch forego,
> And leap exulting like the bounding roe."

We may, also, here be permitted to mention the discovery and invention of the adhesive straps of Baynton and Horner, in the cure of the inveterate ulcers and sore legs of old people, and also of vitiated constitutions. Adhesive plaster, too, within this period, has almost done away with the use of the needle and the suture, even in cases of the largest wounds.

The operation of removing the lower jaw at the tempero-maxillary articulation, for ostro-sarcoma or cancerous degeneration of the bone, was first performed in America, and in the world, by Dr. Mott, as early as the year 1821. It has since been frequently performed by various surgeons in the

United States and in Europe. Some surgeons are in the habit of tying the carotid arteries previous to the operation, some are not. Dr. Mott, who has performed the operation more frequently than any other surgeon, once performed it without tying it, and came near losing the patient from hemorrhage. He afterwards wrote me, that in similar operations he always tied the artery previous to the operation of the amputation of the jaw, and that he considered it altogether the safest course, and one which he shall always adopt. This is certainly the highest surgical authority. Other surgeons have, however, successfully performed this operation without tying the carotid. Large portions of the upper jaw, too, have often been amputated with success, for this terrible complaint. Unfortunately, however, so many of these cases prove ultimately fatal, that many surgeons refuse to perform the operation at all, on account of the contamination of the system by the virus. As in the scirrhous breast, too many of the operations are too long delayed, and the operation becomes unnecessary and useless; so of ostro-sarcoma of the jaw and other bones. It cannot, however, be denied, that the operation both upon the jaw and breast, is sometimes successful; and it should not, therefore, be entirely abandoned, though it should be performed much less frequently than formerly.

The discovery of Lithontripsy, or a method of removing the stone from the bladder, by the method of crushing and grinding to minute fragments within that organ, so that they may be scooped out and washed away, without a resort to the terrific operation of lithotomy, was the invention of Mons. Civiale, of France, within the present half century. Of so great magnitude and importance did the Academy of the Sciences in France consider the greatness and value of the discovery, that they awarded him the sum of ten thousand francs for it. This operation, with the improvements upon it by Herteleup, is now in very general use, both in this country and Europe, though the veteran and distinguished surgeon, Dr. Dudley, of Lexington, Kentucky, still adheres to the old operation of lithotomy, and he has performed that operation successfully more than two hundred times. Perhaps the discovery of the operation by Civiale was induced by the fact that Colonel Hugh

Martin, of England, in the year 1782, once removed a stone from his own bladder by means of a file. The operation was performed much in the same manner with that of Civiale and Herteleup.

The boldness with which surgeons have performed operations for the removal of large portions of diseased organs and members within the last half century, has been a subject of wonder and astonishment. I am not aware that the formidable operation of removing the lower limb at the hip joint was ever performed in this country before it was successfully done by our distinguished surgeon, Dr. Mott, in the person of George Biles, in the year 1824. Since then it has frequently and successfully been performed, and quite recently by his son-in-law, Dr. Van Buren, also a very distinguished surgeon. Operations upon the joints were formerly considered fatal, and were sedulously avoided. I am not aware that the operation of removing the arm at the shoulder joint had been more than once resorted to even in Europe, before the commencement of the nineteenth century. The father of the celebrated surgeon, Ledran, first performed the operation in the year 1715. It has been performed a few times since in Europe. I have been told that the late Dr. Josiah Goodhue, of Hadley, Massachusetts, was the first American surgeon who successfully performed this operation in this country. This, and amputation at the hip joint, are now common operations. Even amputations have been performed successfully at the knee and elbow joints within a few years. Dr. Blaquire first successfully amputated at the knee joint, in Mexico, in the year 1833. Exsection of the knee and elbow joints are now frequently performed for anchylosis.

But the greatest operation of modern times, of any kind or description, which had previously been performed, was that of Dr. Mott, for the excision of the clavicle for ostro-sarcoma. This was acknowledged by all, at the time, to be the most difficult and dangerous operation that had ever been performed upon the living human subject. This alone, if he had not already received the appellation of the first and best living surgeon in the world, would have been sufficient to have given it to him. This was performed more than twenty years ago,

and the patient was a clergyman of South Carolina, who still lives, a monument of the benefit of surgery. "Dr. Mussey had excised the whole arm and clavicle in a secondary operation; and at least two accidents had occurred previous to 1820, (one in the French army,) in which the upper extremity was lost without destroying life." Cheselden has given a plate of a man whose arm, with the scapula, was torn from his body, in a mill, in the year 1737, and the patient recovered. "But it was reserved for the late Dr. McClellan, of Philadelphia, to amputate the whole limb, including the collar bone." "He also extirpated, repeatedly, (it is said, eleven times,) the parotid gland, a fact which has been denied as stoutly, perhaps, as any other in surgery. This was done, also, without taking up the carotid artery," and it is now a frequent operation.

The successful operation of removing large and important organs from the human body, must be considered one of the greatest triumphs of modern surgery. Our distinguished countryman, Dr. McDowell, soon after the commencement of the present century, was the first surgeon in America, and I believe in the world, who successfully removed the ovarium from the female in disease. It is now an operation of quite common occurrence. Even the neck of the uterus, and the uterus itself, has often been extirpated with safety, since the year 1822, when Dr. Lawter, of Edinburgh, successfully removed this organ from the living human subject, and the patient recovered. Although death has occurred after some of these operations, yet as they are sometimes successful, they should not be entirely abandoned. John Bell, and all preceding surgeons, considered the wounding of the peritoneum in surgical operations and accidents, to be always attended with great danger, and to be almost always fatal. We now often see the peritoneum cut, torn and lacerated to a great extent, and the patient recovers. The fear of such inflammation is, therefore, more a phantom of the imagination than a reality. The operation for immobility of the lower jaw originated with Dr. Mott, and he has now performed it between twenty and thirty times. He has also performed the nasal, to distinguish it from the upper jaw operations, for ostro-

sarcoma. It was done by him "to remove a fibrous tumor of years standing, which extended from beneath the nares in front, to some distance below the velum behind."

The use of the microscope, in the investigation and examination of diseased and healthy tissues, is of quite recent occurrence; and the revivification of the uses of it is almost considered a discovery of the last half century, though Liewenhœck had been in the habit of employing it for this very purpose more than one hundred years before. It may be productive of great utility in these investigations.

But the great and distinguishing feature in surgical discoveries in the last half century, is the boldness with which surgical operations have been performed upon important arteries near the source and citadel of life, the heart. To Dr. Mott we are indebted, more than any other surgeon, for the fearlessness and success with which he has arrested the blood in arteries, which it had hitherto been considered absolutely fatal to tie. From his great success in these novel and formidable operations, he has obtained more renown than from all his other most brilliant achievements in surgery. He it was that first demonstrated the possibility of tying the bracheo-cephalic trunk, or arteria innominata, within three inches of the heart, for subclavian aneurism, with partial success, the patient dying twenty-six days after the operation from hemorrhage, so that it would appear that the operation was not the cause of death. This operation has since been twelve times performed, and in no case has death immediately succeeded the operation, although one of the patients died in two hours after it. In the case of Mr. Fearn, (Brasdor's operation) the patient appeared to be doing well, twenty-seven months after the first ligature, and then died, apparently from pleurisy. So confident is the veteran operator, Dr. Mott, of the ultimate success of this operation, that he recently wrote me upon this subject, and stated that he was not eager or ambitious to repeat it, but if another case presented itself to his notice, he should not shrink from the operation. In addition to applying a ligature to the innominata, he stated that he would also tie the common carotid above its bifurcation, if an opportunity presented. Dr. Mott was also

the first surgeon to apply a ligature upon the primitive iliac, within a few years, for aneurism of that artery. The patient is still living. The external and internal iliacs have since been frequently tied. Dr. Stevens, of the West Indies, tied the internal iliac in 1813, and Dr. S. P. White, of New-York, in 1827.

The operation of tying the carotid artery is now frequently resorted to. It had not been done prior to 1800. Medical journals were so uncommon at that time, that it was not known that it had ever been performed in Europe, and it was supposed by some that Dr. Coggswell, of Hartford, was the first to tie that artery with success, in Nov., 1803. The late Dr. Twitchell, of Kentucky, one of our most successful operators, was supposed by many to have tied this artery for a wound the first of any surgeon in the world. It had been performed several times before, but it was not generally promulgated. Both the carotids have been tied subsequently, with success, in the same subject, by Dr. Reuben D. Mussey, now of Cincinnati, for aneurism by anastomisis. Even the aorta itself has been ligated in the human body by Sir Astley Cooper, about the year 1828, in such a manner as to show that even that artery may be tied without destroying life.

But one of the boldest suggestions and applications of the present age, is the omission of ligatures in amputations, and of torsion of the arteries, instead of ligating them. I do not put them down as among the improvements of the present age, as I have strong doubts of the utility or safety of the practice. Ambrose Paré, that great surgical luminary, who lived in the 16th century, I believe, first introduced the use of the needle and ligature in surgical operations, and it was considered the greatest discovery of the age. Before his time, the only method of arresting hemorrhage from important bleeding arteries, after surgical operations and wounds, was by means of the application of red hot iron to sear the vessels. I have some of these searing instruments in one of my old cases.

The method of curing aneurisms upon the great arteries of the human body by means of compression, I consider to be one of the greatest improvements in our profession within the

last half century. I have not time to give a detailed history of it. It was introduced to the profession by Pelletan and Dubois, as early as the year 1810.

The value of auscultation, both mediate and immediate, by which the adept in the science is enabled to investigate and point out the various diseases of the internal organs with as much accuracy as with the naked eye, was first pointed out by Laennec, of France, about the year 1825. I say the adept in the science, for it is a deep and intricate one, and it requires a long course of laborious investigation, first, upon the healthy structure, to become familiar with the normal sounds of the human body, and then with the unhealthy, to become acquainted with diseased structures. But few possess the requisite share of patience and perseverance for these deep investigations, without which the science is of very little value, and will lead to wrong conclusions. This science is of great importance in many instances to enable us rightly and scientifically to apply our remedies, and it enables us to assure the patient and his friends, that in many instances there is no danger in the case. But alas! in many cases, especially when the lungs and heart are deeply diseased, no remedy has yet been discovered to restore them. That fell destroyer of the human race, pulmonary consumption, still reigns triumphant, and amid all the other grand discoveries in medicine, we must bow to the humiliating truth of the inefficacy of the healing art, even in arresting the progress of this direful scourge. We can see a cancerous ulceration on the surface of the body, but are we thereby any better able to cure such an ulceration?

It will be expected, undoubtedly, that I should not only mention, but that I should dwell somewhat at length upon what may be called *the* great discovery of the age, the use of anæsthetics in subduing pain in surgical operations, and in obstetrical processes. This is, indeed, one of the greatest discoveries in the world, and one, which of itself, ought to place our profession at the head of all others in point of utility. For what can be more gratifying than the fact, that we are possessed of the knowledge of an agent which has the power, not only of subduing pain, but even of inducing sleep during the most agonizing surgical operations, and the tortures of ob

stetrics? Yet such is the fact; and although the pretended science of mesmerism or animal magnetism laid claim to the same by means of its superstitious charms and incantations, yet the great body of the public are now well persuaded, that all its miserable pretensions were the effects of collusion, which might easily be effected by the mountebank jugglery of Potter, Signor Blitz and Harrison. Since the great ether discovery, the delusion of mesmerism and phreno-mesmerism as subduers of pain, is rarely, if ever, alluded to. So much has been said of the efficacy of this great ether and chloroform discovery as anæsthetics, in the periodical publications of the day, that you must all of you be as well acquainted with the subject as I am, and it would not be profitable for me to spend any more time upon the subject. Unfortunately, the use of chloroform has in some cases of surgical operations been attended with fatal results, though in hundreds of thousands of cases of midwifery, in which it has been employed, no fatal result has ever followed. The same may be said, even in surgical operations, of the use of sulphuric and chloric ether, which does away the objection to the use of anæsthetics. I shall not, at this time, undertake to canvass the mooted question of the authorship of this invaluable discovery.

I might dwell with great propriety and pleasure upon many other discoveries and improvements of our distinguished physicians during the last half century, but time will not allow of it. I should have been pleased to have spoken of the method of warding off consumption, by exercise in the open air, to the exclusion of all other remedial agents, recommended by the late Dr. Parish, of Philadelphia, and at an earlier period, of horseback exercise, recommended by Dr. Rush, in this complaint. Of the use of animal food in the bowel affections of infants, recommended by Dr. Stewart, of New-York, and of the comparative immunity from disease and death of infants, in the pure air of the country, while in some of our large cities almost one-half of the mortality is among infants, especially in the warm seasons.

We all of us appreciate the value of hospitals for the reception of the sick, the deaf and dumb, the blind, the insane, prison discipline and all sanitary and hygienic institutions. An

impulse has been given to all these benevolent asylums during the period in question, which far surpasses every thing which had hitherto been done from the creation of the world to the commencement of the nineteenth century. The fact, too, that scientific medical men, by their investigations, have put down, if not annihilated the empirical delusions of illiterate pretenders to the profession of medicine, under the form of Perkinism, mesmerism, homœpathy, hydropathy, phrenomesmerism, as exclusive systems of medicine, the Rochester rappings, and all their kindred delusions, is an honorable testimony of their determination to banish empiricism from the land. These systems are but the too easy resort of the indolent and ignorant, who are destitute of the persevering industry which is necessary to constitute a truly eminent physician and surgeon. I could dilate with great satisfaction upon this subject, but as I have already trespassed upon your time, I will close by giving my opinion of a few more of what I consider the great advancements, if not the improvements, of the present generation.

Naturæ Ducæ, nature for our guide, we place more dependence upon her powers in the cure of diseases, though we do not place exclusive reliance upon them. We give less medicine than formerly, but whenever we do give it, we administer it in as heroic doses as ever. We make much freer use of cold air, cold water and exercise, as I have already mentioned, in the treatment of fevers, and less use of violent and perturberating medicines. Less resort is had to depleting remedies, such as the lancet, emetics, &c., in fevers and inflammation. I recollect the time when every pain was considered an inflammation, and the lancet and emetics were uniformly resorted to for the cure of them. Within my recollection, bleeding has been in and out of fashion, at least half a dozen times, in the cure of all complaints supposed to be inflammatory, and all acute complaints were considered to be such. That little instrument, the lancet, has swept the earth as with a broom. It is now more temporately used, and its services in highly acute inflammations are still considered to be invaluable; emetics, too, have had their day, and are not now nearly so often employed, except in cases of poisoning, as

formerly. Many diseases are now believed to be *self-limited* in their operation. Nature must be assisted in her work in the cure of them, and this assistance is more promptly given by mild internal practice, than in the more violent disturbing remedies. Many diseases which were once considered inflammatory in their nature, and treated as such, are now thought to proceed from morbid actions, or derangement of a low or debilitated character, and the treatment is correspondent. We now treat intermittent, and perhaps remittent fever, more exclusively with quinine than formerly, typhus by tonics and stimulants, and typhoid fever, more particularly, by mild nourishment and the use of cold water and cool air.

The splendid works of Willan, Bateman and Rayer, have pointed out a more accurate description and method of cure of those intricate complaints, the exanthemta, than had hitherto been known. Auscultation and the stethoscope have shown the distinctions between the various affections of the lungs, and the method of diagnosis. Nervous diseases which were formerly classified under the head of hysteria, &c., have been described and treated by the moderns with great success, though their protean forms still greatly embarrass the practitioner. Anemia, too, or that bloodless or exsanguinous appearance of the body, from the want of red corpuscles in the blood, has been considered by the moderns a distinct affection of the body, though it had hitherto been supposed merely a symptom of disease, though the use of ferruginous medicines had long been applied to them. The doctrine of the humoral pathology of Bœrhaave, which had long since been considered to be exploded, appears to be now again to be rapidly reviving. Dr. Parish, of Philadelphia, one of our most eminent practitioners, speaking upon this subject, says, "the diseases of the blood and of the fluids generally, so greatly and justly regarded by the founders of the humoral pathology, seemed, until the past few years, to be lost sight of; they are now viewed with the new light thrown upon them by modern animal chemistry, to be of the utmost value and importance. As these inquiries in this direction are pushed, what a flood of light will come upon us with regard to many diseases, the nature of which are now involved in obscurity.

The doctrine of separate tissues in the human body, each having its own functions and diseases, introduced during the present century by Bichat, has also exercised no little influence on modern medicine."

No one can doubt the great importance of post mortem examinations, and their immense value in pathological anatomy. These subjects have had vastly more attention paid to them than in former times, and to them we may, in a great measure, impute many of the great discoveries of the age. I am far from entering into the hue and cry against calomel as a remedial agent. This I conceive to be more the resort of the quack than of regular physicians. I consider it a most invaluable agent in the cure of many diseases. The free use of it is now much out of vogue at the present day, and it is not now so much employed as formerly.

I have thus, gentlemen, just glanced at some of the great medical improvements and discoveries of the last half century, and I have only had space merely to glance at them. Each of the topics to which I have adverted, is sufficient to form a discourse or volume of itself. I have undoubtedly omitted some of the important discoveries, which many of you may think of equal if not greater importance than some which I have mentioned. I could not embody them all in the scope of one discourse. What I have mentioned are sufficient to show that the physicians of the present age have acted well their part in the scenes of human life, and have been the authors of the greatest and most important discoveries of any which have ever been recorded in the annals of science, not even excepting the discoveries of the steam-engine and the electric telegraph.

ART. II.—*Cases in Surgery. Rare forms of Dislocation.* By W. PARKER, M. D., Professor of Surgery in the College of Physicians and Surgeons, New-York. Reported by STEPHEN SMITH, M. D.

CASE I. *Dislocation of the Humerus on the Dorsum of the Scapula.*—Mary Dunn, aged 60 years, native of Ireland, was admitted into Bellevue Hospital May 9th, 1850, with typhoid

fever. While convalescing from fever, she called attention to her left shoulder, the bones of which were found to sustain an unnatural relation to each other. Upon interrogating the patient, it appears that one week before admission to the hospital, while assisting a neighbor to remove some pieces of furniture, she stumbled and fell forwards, striking her left elbow, arm and shoulder against the side of a bedstead. The break in the fall made her body perform part of a revolution, and she reached the floor with her face upward. On examining the shoulder, the head of the humerus could be distinctly felt resting on the dorsum of the scapula, in the infraspinatus fossa; there was also flattening beneath the acromion process; the forearm was carried across the chest, the elbow being thrown slightly outward, with pain in the shoulder and inability to motion.

On the 23d of May, Dr. Parker proceeded to reduce the dislocation, the patient having entirely recovered from her illness. Counter-extension was made by placing a folded sheet in the axilla and around the chest, and applying the force in a direction across the body and slightly upward. Extension was made by pulling the arm outward, downward and slightly forward. While extension and counter-extension were being thus made, Dr. P. pushed the head of the bone forward into its socket, making it at the same time describe a curve, with the concavity looking upward. But little force was required in the operation. The arm was retained in the usual position after the reduction of luxations of this bone, and she was discharged at the end of four weeks, her arm having recovered nearly its former usefulness.—(*Hospital Records.*)

CASE II. *Dislocation of the Humerus into Sub-Scapular Fossa.**—I was requested by Dr. Campbell, of Pittsfield, several years since, to see a patient of his who had suffered a dislocation of the right shoulder. He was a young man, aged about twenty, of good constitution and regular habits, and

* A brief history of this case is given by Dr. Reese, in his Appendix to Cooper's Surgical Dictionary, Art. Luxation.—S.

gave the following history of the accident: He was at the time employed in a woollen factory, and while engaged in his work about a large band-wheel in rapid motion, the right arm was caught between the wheel and band, and in the circuit of the former, the arm was violently twisted or rotated upon itself in the direction of pronation. When liberated from the wheel, the arm and forearm were lying in a position diagonally across the body from above downwards and forwards, strongly pronated and fixed in this state. In this condition Dr. C. first saw him, and was at once struck with the unique position of the affected limb; the rotundity of the shoulder was lost, and upon close examination the head of the bone could be detected beneath the scapula in the *sub-scapular fossa*. This diagnosis was confirmed by a careful appreciation of the action of the forces which produced the luxation: the violent rotation of the arm threw the head of the bone from its socket, causing the primary dislocation into the axilla, and the subsequent violence displaced it beneath the scapula. In the reduction, the arm was first carried outwardly at a right angle with the body, and extension being made, the luxation was changed to that into the axilla, and from this position the bone was easily carried into its proper situation. The patient soon recovered the use of his limb, and was able to resume his work.

CASE III. *Dislocation of the Head of the Radius backward.*—The following case of this rare form of dislocation was communicated to Prof. Parker by Dr. N. K. Freeman, of West Farms. I was called July 6th, 1850, to see Mr. R., an Englishman, aged 37 years, by occupation an embosser of books, who was seriously injured in jumping from the railroad cars while in rapid motion. His face was horribly disfigured by a lacerated wound of the nose and upper lip upon the left side, a fracture of the nasal bones, and severe contusions of the scalp, with tumefaction of the eyelids. But the most interesting feature in the case was the backward dislocation of the head of the radius of the right arm. The symptoms were marked; the hand and forearm were prone, and the attempt to place them in the supine position caused great

pain; while the head of the radius formed a considerable projection posterior to the external condyle of the humerus, where the cavity on its extremity could be distinctly felt.

Assisted by Dr. Walsh, of Fordham, who firmly grasped the humerus, I was enabled to reduce it by extending the forearm and flexing it upon the arm, at the same time pronating the hand and pressing forward the head of the radius with my thumb. After the reduction was effected, I requested Dr. Walsh to examine it; when upon slight extension being made upon the forearm with supination of the hand, the bone was again dislocated. I immediately reduced it in the same manner as before, and directed the patient to keep the forearm flexed and the hand prone, and laying it upon a pillow, apply cold water. He complained of severe pain for two days, which gradually subsided, and on the fourth day he was able to move and extend the forearm. The injuries of the face rapidly recovered, and he was soon able to be about.

CASE IV. *Dislocation of the upper extremity of the Radius outward.*—The following case was recently presented at the College Clinique, which may be considered a displacement of the head of the radius outward. The patient was a girl, aged four years, of fair constitution and general good health; six weeks previously she fell down a flight of stairs, backwardly, with the right arm twisted behind the back, in such position that the whole weight of her body came upon her arm. No treatment was resorted to, and after two weeks she recovered a partial use of her arm; the motions of the joint are now completely restored. The appearance of the limb is that of a fracture of the external condyle, the angle being outwardly instead of inwardly, as in the natural state of the arm; while by pressure over the head of the radius, it is felt to glide into its articular cavity, the "lesser sigmoid notch," but is immediately displaced upon flexion or extension of the forearm. No treatment was advised.

CASE V. *Dislocation of the Femur into the Perineum.*—The following case was reported to the *New-York Medical*

Gazette, in 1841, by Prof. Parker, in whose practice it occurred; and being an entirely new form of luxation of this bone, we have thought it worthy of a republication in this connection.

The patient, Mr. E——, aged about thirty-five, was a caulker by occupation, and the accident happened while he was at work under the bottom of a canal boat, July 20th, 1831. The boat was raised upon props three and a half feet long. He was standing, bent forward very much, and his feet far astride. Between his feet there was lying a piece of round timber, a foot in diameter. While at work in this position, the props gave way, the boat came down, killing one of the workmen, and forcing the patient down by the side of the timber over which he was standing, in such a manner that the left thigh was placed between it and the bottom of the boat; on being extricated from this situation, the left limb was found standing at a right angle with the trunk, the toes were turned a little inward, the natural form of the nates lost, and the head of the bone distinctly felt in rotations in the perineum behind the scrotum, and near the bulb of the urethra.

Reduction was effected without much difficulty in the following manner: the patient was placed upon a table, resting upon his back, and the pelvis confined by passing a strip of muslin around it. Extension was then made downward and outward, accompanied by moderate rotation, and in this way the head of the bone was made to surmount the ramus of the ischium, and to pass into the foramen thyroideum, changing the luxation from a perineal to a thyroideal one. From this position, the bone was replaced in the acetabulum, by carrying the luxated limb strongly across the sound one. The patient soon recovered the use of the joint.

CASE VI. *Fracture and Dislocation of Vertebræ. Reduction. Recovery.*—The following interesting case occurred in the practice of Dr. Graves, an eminent surgeon of New-Hampshire. A man, aged twenty-five years, of good habits and fair constitution, while engaged, Jan. 2d, with several others in clearing the snow and ice from the entrance of a rail-road engine house, the door, which run on trucks at the top, being

raised by one of the company, fell forwards upon the patient, striking him while in a stooping posture, violently across the shoulders. I saw him soon after the accident; he complained of no pain, but had some tenderness between the shoulders and of the contiguous parts. On examination, I discovered that his lower extremities were completely paralyzed, being deprived of both motion and sensation, as was shown by pinching and puncturing the skin, and by his ineffectual efforts to move them. There was a complete erection of the penis, which continued for several hours. At the seat of the injury, which was at the junction of the lumbar and dorsal vertebræ, there was a marked appearance of displacement of the parts; it seemed to be a fracture and dislocation, or at least a sliding of the body of one vertebra over another. What was to be done for the poor fellow thus suffering with a broken back and paralysis of half his body? Shall I abandon his case to its inevitable termination as our book surgeons direct, or shall I attempt to replace the parts in their natural position? The latter I resolved to do, if possible. In order to do this, I placed my patient across the bed, lying upon his face, and placing a folded sheet under his arm pits, and another around his hips, I directed four stout men to make extension and counter-extension by means of these sheets. I now put the patient under the influence of chloroform, and when anæsthesia was complete, the extending and counter-extending force was applied, and in a few minutes I was enabled to reduce the displaced vertebræ to nearly a line with the spine. Bony crepitation was distinctly felt when the parts glided upon each other. Patient was now placed in bed, and ordered to be kept perfectly quiet.

Jan. 3d. Patient had during the night but little pain; slept some; bowels slightly tumid; has passed no water or fæces; has considerable swelling and tenderness at the seat of injury, and complete paralysis of the lower extremities. Ordered cups to be applied to the part, followed by cold applications. 4th. had considerable fever during the night; pulse full and quick; tongue coated; skin dry; had passed no water. Drew off large quantity of urine; continue treatment. 5th. Found patient with high fever and constitutional disturbance; sickness

of stomach; vomiting; complained of severe pain at the seat of the injury. Cupped him freely over the spine, and ordered continuance of cold lotions; drew off urine, and gave ol. ricini; used frictions and external warmth to extremities. 6th. Has less fever; slept some during night; less pain in back; no vomiting or sickness of stomach; no passage from bowels or bladder. 7th. Feels comfortable; slept well during night; ordered an enema of warm water to evacuate bowels; used catheter. 8th. Slept well during night; complains of shooting pains between shoulders; bowels were freely opened; used catheter, and applied cups to spine. 16th. Patient continues without much improvement; total paralysis of lower extremities and bladder continues; urine passes stillicidium.

This case continued about the same as at last record, until the sixteenth day, when he began to have slight sensation in the feet; cupping was continued from time to time, and stimulating liniments rubbed upon the limbs. Strychnine was resorted to at a later day, but without any apparent good effect; galvanism seemed to act favorably in restoring sensation and motion; it was continued six or eight weeks, during which time he gradually recovered the use of his limbs, and at the end of this period, the passage of urine became voluntary, as also the evacuation of the bowels. Patient soon after left the place and went into the country. I did not see him until several months after, when I was surprised by his walking into my office with only the aid of a cane. He informed me, that during his absence, he had continued the use of the battery with marked benefit; there still continued to be a prominence at the seat of the injury.

Remarks.—Dislocation of the humerus on the dorsum of the scapula, the backward or outward luxation of most writers, although placed among the varieties of dislocation of this bone, from the earliest times has been doubted by many to exist. Bichat, in his edition of *Desault's Treatise on Fractures and Dislocations*, while he receives this form of accident as admitted into surgical treatises, holds the following doubtful language in regard to it: "In a luxation outward the elbow is carried forward towards the opposite shoulder;

the capsule being stretched outwardly, gives way in that part, provided the humerus be acted on by a sufficient power. But what can this power be? In a fall, the arm being pushed against the trunk and stopped by it, cannot carry its motion to a sufficient extent to produce a laceration of the capsule. Hence a luxation outward must be extremely rare. Indeed, no instance of it is to be found in books of surgery. Desault, in particular, never witnessed it. Besides, when in a fall, the arm, separated from the body, is carried backward or forward, the weight of the body acts obliquely on it, and it is but partially subjected to the action of the latissimus dorsi, the pectoralis major, and the teres major." It is astonishing that so distinguished an anatomist as Sir C. Bell should deny positively the possibility of this accident. He says, "no force can be applied in a direction to dislocate the humerus and push its head behind the scapula, for this *very evident reason*, that the chest prevents the necessary position of the humerus."* But however it may be regarded theoretically, this variety of luxation has now been met with so frequently as to have its diagnostic features and the mode of reduction well settled. Sir Astley Cooper saw two cases; and in his work on *Fractures and Dislocations*, brief histories of these and seven other cases are given. Marx found three examples among the manuscript notes of Dupuytren, Arnolt, Best, Levacher, Lepelletier, Berard, Boyer, Fizeau, Sedillot, Velpeau, Desclaux, Fergusson, Kirkbridge, S. Cooper, and in our own country, Drs. Physick, of Philadelphia, and Snider, of Tennessee, have met with single cases.†

In regard to the *causes* which have produced this accident, the efficiency of which was doubted by Bichat and denied by Bell, we will mention several in illustration. In the case which gives rise to these remarks, the patient fell forwards, striking her elbow, arm and shoulder so fairly upon the external aspect as to cause a partial revolution of her body to the opposite side, and she fell upon her back instead of upon

* *Operative Surgery*, vol. ii.

† *Leçons Orales de Clinique Chirurgicale.* Par M. Velpeau. Tom. i. p. 277. Paris, 1840. DORSEY'S *Surgery*, 3d ed. vol. i. p. 243. GIBSON'S *Surgery*, 8th ed. vol. i. p. 323.

her face. In case 238, of Sir A. Cooper's work on *Fractures and Dislocations*, (*Ed. Op. Cit.*,) a man "had his right shoulder dislocated through pushing a person violently with the arm elevated:" case 230; "a stout man, in a fracas, fell down upon his shoulder with some violence," producing this accident: case 232 "was the effect of *muscular spasm* solely," in a paroxysm of epilepsy. Dupuytren* expressed the opinion that there was a predisposing cause in these cases, in the shape of the glenoid cavity, namely, its having an inclination backward, and being considerably elongated in that direction; and Boyer seems to have confirmed it in the dissection of a subject. In a marginal note in his Surgery he says: "We have seen, in a subject, a singular inclination of the glenoid cavity backward. It extended, also, to a great length in that direction, so that the humerus could easily be carried into the fossa sub-spinalis."† In this case the backward dislocation could be easily reproduced. Sir A. Cooper had an opportunity to examine a shoulder-joint post mortem, in which this form of luxation had existed seven years, and was marked by the same facility of reproduction when reduced as in Boyer's case. Instead, however, of "une disposition vicieuse de le cavité glénoide," he found the tendon of the sub-scapularis and the capsular ligament had been torn from the smaller tubercle of the head of the os humeri, and the bone was consequently drawn back by the action of the infra-spinatus and teres minor muscles, and there was no support given to the head of the bone when returned into its cavity; but so soon as it was replaced, it was drawn back by the action of the two posterior muscles, and all the appearances of dislocation were reproduced. Although the shape of the glenoid cavity may occasionally predispose to this accident, it is not probable that it is a general condition, for "in the usual dislocation backwards, or on the dorsum scapulæ, the bone, when reduced to its proper situation, remains there, and only requires a roller and rest for a few hours, to prevent the future escape of the bone from the glenoid cavity."—COOPER.

---

* *Leçons Orales de Clinique Chirurgicale*, tom. i. p. 74. Par BARON DUPUYTREN.

† BOYER'S *Surgery*. Trans. by A. H. STEVENS, M. D., 1816, vol. ii. p. 256.

A late writer on operative surgery thus explains "the comparative frequency of the displacement into the axilla, and the infrequency of that on the dorsum scapulæ. The explanation is found in the natural position of the arm with regard to the chest and the general economy of the body. In a fall forwards, both arms are brought into requisition, and therefore the occurrence of injury is less probable; whereas, a side fall involves one arm only, the other being uselessly placed at the opposite side of the trunk. If this reasoning be correct, no fall but that in an oblique direction forwards, in which possibly the opposite extremity may be paralyzed, or engaged in some very important duty, such as carrying an object of value, could become the cause of that primary form of dislocation, of which the secondary effect would be a displacement backwards on the dorsum scapulæ."—SKEY.

"The *diagnostic* marks of this injury," says B. Cooper, "are loss of motion of the affected limb, the direction of the arm forwards and inwards, and a slight degree of pronation of the whole of the affected extremity; the natural roundness of the shoulder may be described rather as being altered than lost, as the flattening occurs only anterior to the acromion, where the skin is drawn into puckers or folds. On raising the arm to a right angle with the side, and tracing the long axis of the humerus, the eye is carried in a direction behind the glenoid cavity; and if the patient be thin, the head of the bone may be felt upon the dorsum of the scapula, on the fossa infra-spinata, between the bone, the teres minor, and the infra-spinatus muscles."* The position of the arm "forwards and inwards" is by no means constant: it may hang vertically by the side, the elbow being closely applied to the body, or thrown a little outward; or it may be placed horizontally upon the chest, the forearm being flexed, and the hand resting upon the head. This difference depends upon the extent to which the head of the bone is displaced from its socket.

Reduction was easily effected in the above case, by the means usually adopted in dislocations at this joint, namely, by extension and counter-extension. Sir A. Cooper, however,

* *Surgical Essays, &c.* By BRANSBY COOPER: p. 206. London, 1843.

accomplished this object by simply "raising the hand and arm perpendicularly, and by turning the hand backwards behind the head;" a manipulation of the limb similar to that lately resorted to in an analogous dislocation of the lower extremity.

Dislocation of the head of the humerus into the sub-scapular fossa, an example of which we here report, is a form of luxation of this bone, unnoticed by authors, and of which we are acquainted with no recorded case. This accident must be of extremely infrequent occurrence, owing to the peculiar character of the forces necessary to its production. The diagnosis in this case was not difficult; the arm and forearm were lying diagonally across the chest, the rotundity of the shoulder was lost, and the head of the bone could be recognised under the scapula. The reduction was first made into the axilla, by extension and counter-extension, and from this position the head of the bone was easily carried into its socket.

The comparative frequency of the displacement of the superior extremity of the radius, forwards or backwards, is judged of by writers according to their personal experience. Boyer was of the opinion, that it could only be luxated backward, (*Op. Cit.;*) and many authors, as Chelius, South, Guthrie, Gibson, &c., agree that is the more frequent dislocation. On the contrary, Sir A. Cooper believed the forward dislocation the most common accident, having met with six examples of it, to but one in the opposite direction; Fergusson, Liston, Syme, Druitt and Skey coincide in his experience. In regard to the luxation backward, which we must consider the rarer form of accident, Boyer remarks, "this luxation is most frequent among children, because, in them, the ligaments and tendons of the extensor muscles are weaker, and the sigmoid cavity of the ulna is more superficial. It is always complete. The annular ligament is ruptured when the accident takes place directly from external violence; in some cases, however, the ligaments are merely stretched. In several instances, this luxation has been occasioned by a fall upon the hand, unexpectedly caught in a state of extreme pronation; but it is most generally caused by external violence, tending strongly to pronate the hand; hence it occurs frequently in children

who are lifted by the hand over a stream, or into the arms of another person; and also, when they are taken by the hand in play. In these circumstances, the hand being generally pronated very suddenly, the luxation is either immediately produced; or by repetition of this improper practice, the ligaments which connect the upper end of the radius with the humerus, become so much relaxed as to suffer the bone to be displaced." (*Op. Cit.*)

The diagnosis of this accident would not seem to be difficult when the examination is early, and even with considerable tumefaction; the fixed pronated condition of the forearm would lead to strong presumption of the nature of the difficulty. In this case, besides this sign, the head of the radius in its false position, and the cup-shaped depression on its extremity, could be readily detected. Prof. Langenbeck,* in the report of two cases of this injury which occurred to him in a single winter, the only cases of dislocation of the radius in any direction he has ever met with, says, "the peculiar form of the radial side of the forearm, without displacement of the ulna, chiefly indicated the nature of the mischief. At the origin of the supinator radii longus, and of the extensor muscles from the external condyle, and of the upper portion of the radius, there was a marked prominence; the form was somewhat similar to what we meet with in rickety persons, in whom the radius is generally bent. The hand was prone, and could not be brought into a state of supination; the forearm was moderately bent, in which position it was fixed, for the arm admitted of neither flexion or extension. On the inner side of the internal condyle, the skin was lax, and presented a depression, in which the internal articulatory surface of the humerus could be felt. On tracing the radius from below, upwards, the finger came against the external condyle, behind which, in the adult, the articular circumference of the head of this radius could be felt, and next to it the olecranon. On placing the fingers on the radius in this spot, and moving the bone as far as it admitted, the motion was also communicated to the finger. Behind and below the external condyle in the

* *London Lancet*, N. S. vol. i. p. 248.

child, the glenoid cavity of the head of the radius could be felt." Of the treatment adopted by Dr. Freeman we have nothing further to remark, than to recommend it as that best adapted to meet the indications of the case. Reduction is not generally found to be difficult, but cases have occurred in which the patient was obliged to live with this form of dislocation; in such instances the arm, though limited in its movements, becomes very serviceable.

Such a case has occurred to Prof. Parker, the subject of which was a medical gentleman. The accident occurred when a child, and the motions of the arm had gradually become quite free; flexion, however, being limited to about a right angle.

The cause of the deformity in the case of displacement of the head of the radius outwardly, is doubtless the result of the non-union of the orbicular ligaments, and the tendency of the muscular attachments to draw the head of the radius from the ulna. The following case, (*Cooper on Dislocations and Fractures*, case 272,) bears some relation to it: "Mr. Adams, of Dublin, in one of the articles on dislocation which he has contributed to Dr. Todd's valuable Cyclopædia of Anatomy, gives the case of a young gentleman, whose left radius became gradually dislocated, by the action of the flexor muscles upon the external condyle, where a new socket was formed for it, from which new socket, however, it was occasionally dislocated farther outwards. This displacement was the consequence of a violent blow, which had rendered the limb weak and wasted."

The only example of the luxation of the femur in perineo to which we can refer, in addition to the one here recorded, was reported to the *St. Louis Medical and Surgical Journal*, July, 1850, by Prof. Charles A. Pope, of the St. Louis University. It is the following:—"J. B., an Irishman, aged forty, on entering the St. Louis Hospital, gave the following account of his accident, which had occurred six hours previously: He was engaged in excavating earth, and, having undermined a considerable bank, it unexpectedly fell upon his back, catching him in a bent position, with his legs stretched widely asunder. The weight crushed him to the earth,

simultaneously fracturing both bones of his right leg, the lower extremity of the radius of the same side, and also dislocating the left hip. On examination, the fractures were readily recognised, and my attention was at once directed to the peculiar position of the left thigh. This was thrown quite at a right angle to the body, and somewhat forward. The normal site of the great trochanter offered a cavity in which the fist could easily be placed, while the head of the bone was both seen and felt below the skin, and raising the raphi of the perineum. On rotation, which was difficult, and caused intense suffering, the movements of the *caput femoris* were distinctly visible. There was experienced by the patient an inability of voiding urine, which was, doubtless, produced by the pressure of the head of the bone upon the urethra, and the difficulty continuing after reduction, relief was afforded only by use of the catheter. This trouble soon subsided. The fractures having been attended to, and the patient put under the full effect of chloroform, two loops were applied, interlocking each other in the groin, and using the leg as a lever, extension, by means of the pulleys, was made transversely to the axis of the body. A steady force was kept up for a short time, and the thigh bone glided into its socket with a snap that was heard by every attendant and patient in the large ward, where, for the convenience of the pillars, the operation was performed. The patient, on recovering from the influence of the anæsthetic, seemed much delighted, and said that he had felt no pain whatever." Dr. Pope continues: "It might be supposed that there may have been, in these instances, some error, and that the displacement of the head was merely into the foramen ovale, and not into the perineum. I feel confident, however, that both (referring to a verbal report of Dr. Parker's case) were really dislocations, as reported. The various medical gentlemen who examined the case with me, all coincided in my opinion. The direction of the displacing force in these two varieties of luxation is precisely the same, and but little greater violence would be required to throw the head on, past the foramen ovale, and branches of the ischium and pubis, into the perineum. In the cases cited, there was the same position of the body, and

of the outstretched legs, and the attendant causes and circumstances were just such as would most likely favor the production of such an accident. Had the head of the femur, in the case of J. B., been situated in the foramen ovale, it could not have been so plainly seen and felt, covered, as it would have been, by the thickness of the interposed muscular attachments. Besides, the exaggerated position of the thigh, and the direct pressure of the head of the bone on the urethra, causing a retention of urine, are, to my mind, conclusive evidence of the nature of the case; for although, in the latter instance, some irritation might be propagated from the head, displaced in the foramen ovale, yet it would scarcely be so great as to cause retention of urine to the extent observed in the case above related."

The possibility of a dislocation of one vertebra from another, without fracture, was long disputed by surgeons. Abernethy, in his usually positive manner, denies it. Sir Astley Cooper never witnessed the separation of one vertebra from another, through the intervertebral substance, without fracture of the articular processes; or, if those processes remain unbroken, without a fracture through the bodies of the vertebræ." It is now, however, settled beyond a doubt, by the examples of Desault, Chopart, Rust, Schuh and others, that such accidents may occur in the cervical region. But in the dorsal and lumbar regions, where a different anatomical character of the oblique processes obtains the displacement of the bodies of vertebræ without fracture, seems physically impossible; and yet Mr. Brodie* declares, that Mr. Lawrence has proved the possibility of even this form of injury. The case above related is plainly one of fracture, with displacement, which is an accident of occasional, but not frequent occurrence; but its chief interest consists in the mode of treatment, which was adopted with so much success.

The practice of the ancients in luxations of the vertebræ, was to make extension and counter-extension with some local manipulations to adjust the displaced bones. Hippocrates seems to have established this practice, and succeeding wri-

* *Medico-Chirurg. Trans.* vol. xx.

ters adopted it without scarcely an improvement or suggestion. His plan was the following: a board, in length and breadth such as to contain the man, or a bench equal to it, is to be placed near a wall, being extended along the wall, and not more than a foot distant from it, and some robes are to be spread over it to prevent the body from being injured. Then the man, being bathed, is to be laid on his face along the board or bench, and a thong is to be twice passed round his breast by the arm pits along the back; and the extremities of the thong are to be fastened to a pestle, like a piece of wood, erected on the floor at the extremity of the board or bench, and this to be given to a person standing behind the patient's head to hold, so that when the lower parts are secured oppositely, and the upper pulled towards the head, extension may be made at the proper time. Then another thong being bound round both the feet above the ankles, and again another above the loins, so that its two ends may meet upon the haunch bones, the extremities of these thongs are to be again united together, and bound to another pestle-like piece of wood resembling that already described; and this pestle, like the former, is to be erected near the extremity of the board or bench at his feet, and then we are to order the assistants to make counter-extension by these pieces of wood. While the extension is thus made, we press down the prominence of the back with the palms of the hand, and if necessary, we may sit upon it without apprehension.* In the time of Ambrose Paré, reduction of these dislocations by extension was still considered indispensable to the safety of the patient, and there is figured in his great work, the surgeon and his assistants in the act of restoring "the spine outwardly dislocated," by extension and counter-extension.† But modern writers very generally condemn any attempts at reduction by extension, merely directing to keep the patient quiet in the horizontal position, and meet whatever indications may arise. "To attempt," says South, "to set a fracture through the body of a vertebræ, accompanied, as it almost invariably is,

* HIPPOCRATES' *Works, Art. Articulations.* (*Sydenham Soc. Ed.*)

† *The Works of* AMBROSE PARÉ, p. 354. London, 1691.

with displacement, and most commonly with fracture of the vertebral arch, or articular process, is, as Chelius remarks, most highly dangerous, and ought never to be attempted."* But when we consider the inevitable fate that awaits the patient if unrelieved, the slight change of parts often required to relieve the spinal cord of the pressure exercised upon it, and especially the success that has frequently attended these efforts at reduction, we must conclude that carefully executed attempts to adjust the fractured and displaced vertebræ by extension and manipulations, afford the sufferer the fairest chance of recovery.

A case somewhat similar to that above is related in Schmucher's surgical works. A soldier received a violent blow on the back from the falling of a wall. When extricated he was deprived of sense, and breathed with extreme difficulty. On examination it was discovered that the last dorsal vertebra was luxated on the first lumbar, and had passed three fingers' breadth beyond its edges; this derangement was situated to the right and backwards. The patient was put to bed and laid on his belly, and extension kept up by means of assistants. The surgeon was able, with great difficulty, to reduce the bones, which were again displaced as soon as the extension was relinquished. Four assistants were directed to keep up the extension for several hours, while a fifth retained the bones in their position by compression with his hand. A compress, moistened with spirits, was also applied to the seat of injury, and upon this placed a weight of fifty pounds. On the following day the weight was removed, and a tight bandage substituted, and bleeding resorted to. The patient remained extended on his belly for the space of a fortnight, with the superior part of his chest raised higher than the pelvis, with the intention that the bodies of the vertebræ should be brought into more exact apposition. On the twentieth day he was able to lie upon his back, and at the end of the fourth week his back was sufficiently strong to allow him to sit up; and at the end of six weeks his strength

* SOUTH'S CHELIUS, vol. i. p. 589.

was sufficiently established to pursue his trade, that of a mason.*

In support of this practice we have the opinion of Mr. Brodie.† "There can, however," he says, "be no doubt that when the injury is in the lower part of the spine, the attempt to effect reduction may be not only made with impunity, but that it may be successful." In proof of this he refers to the case of a man admitted into St. George's Hospital, who had met with an injury several months before, in consequence of a mass of chalk having fallen upon him while working in a chalk pit. The surgeon found the first lumbar projecting over the last dorsal vertebra. With some difficulty he reduced the displaced vertebra to its natural position, the reduction taking place with a jerk or snap. He, however, did not regain the use of his lower extremities to any extent, and was obliged to resort to the catheter to relieve the bladder, (p. 148.) In another instance "there was a fracture with great displacement of the third and fourth lumbar vertebræ. When the patient had recovered from the state of collapse which had followed the first shock of the accident, I endeavored, by fixing the thorax and cautiously extending the pelvis, to restore the vertebræ to their proper places. The attempt was in some degree successful, and no ill effect of any kind resulted from it," (p. 150.) An interesting case in point is reported by Mr. Crowfoot.‡ A man, aged 42, coachman, was caught in a covered gateway and bent completely double. His lower extremities were found paralyzed, and on examination of the back there was discovered a great deformity about the ninth, tenth, eleventh and twelfth dorsal vertebræ, occasioned by an increased posterior curvature; the spinous processes of the ninth and tenth vertebræ were divided from each other considerably beyond their usual distance, the body of the ninth vertebra having been forced forwards, whilst that of the tenth projected backwards. The abdomen be-

* *Parisian Chirurgical Journal.* By M. DESAULT. *Trans.* by R. GOSLING, Esq. London, 1794, vol. ii. p. 316.

† *Medico-Chirurg. Trans.* vol. xx. p. 150.

‡ *Provincial Med. and Surg. Jour.* Oct. 7th, 1846.

came almost immediately distended; the ability to empty the bladder was lost, and there was a total deprivation of the power of voluntary motion and of sensation in the lower extremities. The diagnosis was clear, and the prognosis fatal. "Unwilling, however, to leave the poor fellow without making some effort to relieve him, we determined to try the effect of cautious extension, and I applied it in the following manner: After the bowels had been emptied by an enema, and the bladder by a catheter, a broad and well padded belt was passed around the chest and under the arms, and it was fixed from behind to a strong staple at the upper end of the frame of the bed; another equally broad and well padded belt was buckled round the body just above the pelvis; this latter belt had two very strong straps attached to it, one before, the other behind, each having a strong iron ring at its extremity; these straps were brought between the thighs, care having been taken to avoid pressure on the penis and scrotum, and made fast to the pulleys. A gradual but considerable extension was now kept up, whilst some slight attempts were made by the pressure of the fingers to aid the replacement of the bones. The deformity of the spine was evidently diminished by the extension, whilst the pressure on the posterior tractus of the spinal cord was so far relieved as to permit an almost immediate restoration of a certain degree of sensibility in the parts below the injury, where it had been entirely lost, but there was not the slightest return of voluntary motion." This patient gradually convalesced, and in a twelvemonth was able to resume his business; with the exception of pain in the loins, and some degree of numbness of the extremities after severe exercise, he enjoyed perfect health. In commenting upon the treatment resorted to in this case, Mr. Crowfoot remarks, that all the ancients, from Hippocrates to Ambrose Paré, recommend extension in the treatment of fractures of the spine, while every writer of the present time deprecates its employment as dangerous. In the course of his practice he had three or four cases of fractured spine, and in these cases he had done precisely what he had seen done by others; he had endeavored to foretell, according to the situation of the fracture, what length of time the person would

live, and that was all. From want of success he had at length determined to employ the mode of practice recommended by the ancients. In the case in which it was tried the man was completely paralyzed both to sensibility and voluntary motion, and during the extension sensibility was so far restored, that on pinching the man he felt it in parts of the limb. After three weeks the power of motion began to be restored, and gradually and steadily returned, and the patient recovered completely, except that a partial deformity of the spine remained. "We call especial attention," continues the editor, "to this case, because in our own practice we have met with four or five cases of fatal injury to the vertebræ, where the accident occurred chiefly to laborers in good health, in the prime of life; where the individuals presented no symptoms on being received into the hospital wards excepting paralysis; where every surgeon who saw the cases pronounced them hopeless, and where it was not deemed prudent to make any effort at relief; and because, from the examination in more than one of these instances, it has occurred to us that a mechanical adjustment of the injured or displaced vertebræ might be sometimes effected in such cases, and a chance of recovery thereby obtained."*

ART. III.—*Remarks on Tumors, with cases.* By JAMES BRYAN, M. D., Professor of Surgery in Geneva Medical College, N. Y., and of the Institutes of Medicine in the Philadelphia College of Medicine.

"A tumor, (says Mr. Liston,) is a swelling of new production, and not a part of the original composition of the body." "Tumors, (he adds,) may be divided into solid and encysted." He then proceeds to speak of simple, adipose, fibrous, encephaloid, melanoid, carcinomatous tumors, and fungus hæmatodes, together with painful tubercle, polypus and tumors of bones, viz., osteo-sarcoma and spina ventosa.

Dr. Miller divides tumors in, 1. Tumors of soft parts; and 2. Tumors of bones. 1 solid, 2 encysted. Solid tumors he

---

* *Ranking's Half-Yearly Abstract*, No. iv., 1846, p. 227.

vides into, 1, simple; 2, malignant. Simple tumors are divided into, 1, simple sarcoma; 2, adipose; 3, fibrous; 4, cartilaginous; 5, calcareous; 6, osseous; 7, cysti-sarcoma. Malignant into, 1, simple, but connected with a general vice-*tubercular;* 2, malignant; *a*, medullary; *b*, carcinoma; *c*, melanosis; *d*, fungus hæmatodes.

Tumors are worthy of our attention, not only on account of their nature and size, but because on account of the part or parts pressed upon by them, as well as the organs or tissues which may be involved in their structure. The orbit of the eye, the interior of the skull, the neck, the chest, the abdomen, the pelvis, or other so called cavities of the body, may be more or less occupied with tumors, and the contained organs pressed upon by them or their functions, impeded. In the same way, tumors external to the four cavities of the body may involve important organs in their growth.

The causes of tumors may be, not only blows and contusions of all kinds, producing a congestion of the parts, under the law so well stated by Haller, viz., "ubi irritatio ibi fluxus," but constitutional diathesis, as scrofula, cancer, rheumatism, gout, &c., together with syphilis. Peculiar kinds of diet or habits may be causes of various descriptions of tumors. We have seen a tumor involving the whole structure of the left eye, (staphyloma,) which had been produced by a slight accidental blow from the little finger of a friend. We have seen an osteo-sarcoma which required eighteen years to destroy the patient, by pressure on the brain, induced by a kick from a horse, on the left side of the os-frontis. A patient carried twelve encysted tumors on different parts of his body, shoulders and arms, which had appeared without known cause. Ovarian and uterine tumors grow and fill the pelvis and abdomen, from slight blows, child bearing, or without any known cause. A patient in Geneva, N. Y., had two rows of large scrofulous tumors on her neck, pressing on each side of the larnyx and trachea, and finally perished from the pressure on the air passages. This young lady was but eighteen years old, and remarkably beautiful. Malignant disease will sometimes seat itself in the gums and jaws, after the extraction of one or more teeth. The neck is frequently the seat of

simple and malignant tumors, which are dangerous to life on account of their proximity to the larnyx and trachea. We have seen a fungus hæmatodes sprout out of the left parotid region, and in four weeks measure five inches in diameter, which opened into the pharynx, and destroyed the life of a young man of temperate habits, only twenty-one years of age.

The important question as to the value of surgical interference in tumors generally, and especially malignant tumors, has yet to be decided. I operated on a carcinomatous tumor of the left mamma of an unmarried lady, aged 35 years, in June, 1848. She died about eight months afterwards from extension of the disease to neighboring parts. I extirpated a large cauliflower excrescence from the os-tincæ, in August, 1842, and the patient died in the month of February following, the uterus, broad ligaments, and peritoneum having become involved in the disease. This female was about 35 years of age, a mulatto, and had borne children. One of the cases reported below will *probably* live eight months or a year after the operation. The prospect previous to the operation was, that death would supervene in a few weeks. In these and other cases which might be mentioned, wherein operations have been resorted to in malignant disease, there appears to be two things gained, first, present relief from pain and irritation; second, a prolongation of life, which does not extend over years, but is restricted to months. The osteosarcoma of the os-frontis above mentioned, had been operated upon twice with the effect of prolonging life about eight months. It is of course important that the nature of a tumor should be well understood before adopting any therapeutic means. The fact that sometimes true carcinoma remains dormant for months and years, should be remembered in these cases. The fact that tumors not previously suspected of being malignant, have suddenly developed themselves, after injudicious irritation or partial excision, should always be remembered. The exploring needle of Professor Kün, of Strasburgh, may perhaps be resorted to with advantage in doubtful cases. "It consists in an exploring needle, having at its extremity a small depression, with cutting edges. On plunging this instrument into a tumor to any depth, we can

extract a minute portion of the tissue of which its various layers are composed. In this manner a microscopic examination of the tumor can be practised on a living subject, and its nature ascertained before having recourse to an operation." (*Monthly Journal of Medical Science* for May, 1847,) as quoted by Dr. Wythes. But we are unhappily not much enlightened, at least much less than was anticipated by our microscopical examination of heterologous growths of the human system. Walshe and Hodgkin have perhaps accomplished as much as can be done in this respect.

CASE I.—Mr. G. was a stout athletic farmer, of 35 years of age, married, and accustomed to hard labor. He first discovered a small tumor on his neck about eighteen years since. It had exhibited itself in the sub-maxillary region, inside of the sterno-mastoid muscle. This had, however, gradually grown, and latterly more rapidly, to its present size, which was that of a large goose egg, or perhaps larger, and very hard, but not painful; quite moveable, and apparently having no important attachment. An incision was made in the long diameter of the tumor, the platyœna myoides divided, together with the local cellular tissue and several small veins, and the tumor was easily exposed, encased in a tight cyst or cap. On puncturing it, it was found to be fibrous and somewhat encephaloid. It was easily turned out with the handle of the scalpel, and with its case. In the process, the lingual artery and vein were exposed in the upper part of the wound, the anterior belly of the digastric muscle, several sub-mental and sub-lingual glands, and the posterior edge of the omo-hyoid with anterior border of the sterno-mastoid muscles. The facial artery and vein were avoided, as well as the anterior jugular. The wound was considerable, but did not bleed much. The man bore the operation well, but cried a little about his wife

and little children when he saw the blood running down over his clothes. In half an hour the bleeding had ceased; the wound was soon after dressed, two sutures were introduced, and the patient kept his bed until the next day, when he left Geneva for his home, some nine miles out in the country. Three weeks afterwards, and before I left Geneva, I saw his employer, who told me he was well and at his work. This has been the case I believe ever since. He did not take chloroform.

The second case was that of Charles Dorsy, a mulatto man of about 38 years, married, with two children, wife dead; had had intermittent fever four years ago, after which this tumor began to grow in the right sub-maxillary and parotid regions. It soon became painful, and during the last two years, the darting pains through the tumor and head and face had become intense. He had, from a stout athletic man, become thin and emaciated. The head was thrown over to the left side, and was habitually supported by the left hand. The appetite began to be affected, and anodynes were necessary in order to procure any satisfactory sleep. The tumor extended back to the transverse processes of the cervical vertebra, and down nearly to the clavicle; forward against the larynx and trachea, pushing them somewhat towards the left side; and upwards to the parotid region, and somewhat over the margin of the base of the jaw. The whole tumor had a hard, knotty feeling, but did not appear to have any very close bony attachments. The patient resolved, at the suggestion of some officious medical adviser, not to take chloroform or ether; and, in fact, bore the operation, which lasted more than an hour, with stoic firmness and almost indifference.

He was placed upon the ordinary operating table of the lecturing theatre, on his left side, with his head and shoulders moderately elevated. Having found that my friend, Dr. Campbell, of Lima, N. Y., could control the hemorrhage, during the operation, by pressure upon the root of the common carotid, I proceeded to operate, first taking up that vessel, which otherwise appears to be the safest plan.

An incision was made from above the lobe of the ear, down nearly to the clavicle, and another from near the back of the

neck to the middle of the chin, directly across the first, producing a quadrangular area, with four flaps, each of which was turned up to its fullest extent before the tumor could be exposed. The upper corner of the tumor dipped down behind the angle of the jaw, producing, by its pressure, the absorption of a portion of the parotid gland. A part of this gland was taken up with the tumor. The lingual artery and vein were exposed. The facial artery and vein were taken up and excised; and the external carotid, which passed directly through the tumor, was taken up both below and above. The external jugular vein also ran through the tumor, and was twice tied and cut off. The posterior portion of the tumor was pretty firmly attached to the transverse processes of the cervical vertebra, by a hard, fibrous or cartilaginous connection. The sterno-mastoid and omo-hyoid muscles were reduced to mere ribbons, and were so interwoven with the external surface of the tumor, that it had to be excised, both below and above. The anterior portion of the tumor was somewhat connected with the right lobe of the thyroid gland. A careful dissection was necessary, to separate it from this gland and the numerous vessels in the vicinity. The inferior thyroidal artery was exposed, but not injured. By this time the tumor was more or less isolated from all the parts, except that immediately under it. Not daring to use the edge of the knife, through the blood which surrounded its base on all sides, I introduced my fingers, and tore it from its connection with the common carotid and jugular, for the space of three inches. After cutting some fibres of undivided cellular tissue, the whole mass was removed, leaving a hole quite large enough to bury my fist in, and too large to be covered by the integuments which had been divided by the two external incisions.

The patient did not complain during the operation, except during the traction necessary to separate the tumor from the carotid and neighboring parts, but remained perfectly still, without motion or a groan. He was then placed abed, with his head elevated, and the wound dressed about two hours afterwards.

The flaps were brought together as nearly as possible, and

adhesive straps, with a few intercepted sections, used to retain the flaps in their places. Two pupils for each four hours were detailed from the class, and the patient, for several days, was thus watched and attended to. The danger feared was the external carotid which had been ligated, but no hemorrhage occurred, and the wound healed, in a great degree, by the first intention; the patient sleeping, from the beginning, without anodynes; the pains of the tumor seemed all to have left with the operation.

Five months have passed since the above operation was performed, and the patient has been, until within the last few weeks, quite comfortable. Now I find, for he has come on to Philadelphia to see me, that the neighboring parts, such as the cheek, the parotid gland, the side of the neck, and the chain of cervical glands running down the neck, are all taking on that knotted, sore and painful condition which the tumor itself exhibited before the operation; and I have little doubt but my patien will die before many months shall have passed away. The effect of the operation has been, as in that of cancer of the breast, cauliflower excrescence of the uterus, and other similar cases, to ease pain for the time, and prolong life some eight or ten months.

The microscopical appearances of these tumors were those of bands and fibres, granules amorphous, cheesy matter, and semi-irregular vesicles.

I was assisted in the operation by Prof. C. A. Lee, of the Geneva College, Drs. J. Smith and G. W. Field, of Geneva, and Dr. Campbell, of Lima, N. Y.

ART. IV.—*Removal of an Ovarian Tumor by the large abdominal section; death from Peritonitis.* By W. H. VAN BUREN, M. D., Surgeon to Bellevue Hospital, &c., &c.*

MORE than two years ago I had the honor of exhibiting to the Society an ovarian tumor of considerable size, which had been removed successfully from an unmarried female, who is still living in this city in the enjoyment of excellent health. The specimen at present before the Society was removed by a similar operation, but its removal was followed by a different result. As facts of this nature are not liable to misinterpretation and are always of deep interest, I feel it a duty to lay before the Society the details of this case as fully as those of the former one, in order that they may attain publicity through the same channel.

A married lady, 45 years of age, of active habits, spare build and good constitution, had been annoyed by an enlargement of her abdomen for seven years, during which time it had gradually increased to the size attained by most women at the seventh month of pregnancy. She had borne four children, and thought herself larger, and felt as if she carried more weight than with any of them. Her last childbirth dated five years before the commencement of the abdominal enlargement. This began whilst she was in the enjoyment of apparently excellent health, by the occurrence of a sudden and severe pain in the lower part of the belly, on the left side, about the position occupied by the left ovary; the pain at this point, which was of a sore, aching character, led to the discovery of a hard moveable mass as large as an egg, apparently in the cavity of the abdomen. In a few days the pain disappeared spontaneously, but the newly discovered tumor continued to increase steadily in size, thenceforward without the slightest pain, until the present time. She consulted several physicians, and was told she had an ovarian tumor; but few remedies were employed, and these exercised no apparent influence upon its growth. She continued in good health, suffering only inconvenience from the tumor, for five years, and menstruated regularly. At the end of this

* From the Minutes of the N. Y. Pathological Society, Jan. 14th, 1852.

time a slight but continuous bloody discharge commenced from the vagina, and thenceforward no *periodical* increase of the discharge was recognised. By this change she was induced again to consult a surgeon of eminence, who advised a mercurial course, and the wearing of a tight bandage around the abdomen. The only results which followed this treatment were a slight diminution in the abdominal projection, and a gradual protrusion from the vulva, which was subsequently found to consist of the upper wall of the vagina, and posterior wall of the bladder. This new feature in her case gave rise to much inconvenience and pain; excoriation was caused by the contact of the urine with the protrusion, and it prevented her from taking active exercise; added to which there was now a manifest deterioration in her general health. Up to this period she was sensible of a great degree of mobility in the tumor, and was able almost to turn it over and over on itself.

The increasing uneasiness and constant hemorrhage during the following two years was accompanied by a progressive increase of debility, and at the end of this time she had fully made up her mind to undergo the removal of the tumor, if such an operation were possible, and for this purpose arrived in New-York on the 31st of October, 1851, having travelled more than two thousand miles. On the day after her arrival she consulted me, and I obtained the history of her case as already stated. She was fully conscious of her situation, possessed evidently an excellent morale, and a firm, quiet and decided character. She did not conceal her mature determination to get rid of her disease by any means that might be considered justifiable, as it rendered her life more than burdensome, and evidently threatened to put an end to it at no distant period.

On examination, I found the abdomen occupied by a tumor about the size of the uterus between the seventh and eighth month of pregnancy, and possessing a very considerable degree of mobility. It was evidently not of a fibrous hardness, but gave a sensation at most points of deep and obscure fluctuation; at one spot this fluctuation was quite evident. The cavity of the abdomen contained also a sensible, though tri-

fling amount of fluid, showing that peritoneal effusion had already commenced.

The tumor was evidently deeply received into the cavity of the pelvis; a finger in the rectum recognised this fact, and also the sensation of deep fluctuation in correspondence with the other hand placed upon the abdomen. By this manœuvre it was also attempted to lift the tumor out of the pelvis, but without much success; the impression being left by this mode of examination that adhesions might possibly exist connecting the tumor with the pelvis.

By two fingers in the vagina the protrusion of the bladder with its upper wall was recognised, as well as the mobility of the uterus separately from the tumor, which was made out satisfactorily, although with difficulty, as also its natural size, situation and weight. It was not found necessary to employ the uterine sound. I recognised, also, distinctly as I thought, ulceration around the greater part of the os-uteri, and accounted thereby for the hemorrhage from which she had so long suffered. Under the head of adhesions, I find it mentioned in the notes taken at the time of this first examination, that "the intestines maintained a suspicious proximity to the tumor in the right hypochondrium, especially when it is pushed well towards the opposite side."

As to her general condition at this time, she presented no evidences of disease, beyond what has been described, except a constantly too frequent pulse, and a slightly yellowish tint of skin; these were both considered as consequences of the habitual loss of blood, and she was advised to use 12 drops of the syrup of the iodide of iron, an hour after each meal, as a remedy called for in any event. Her appetite was habitually good, and the bowels had always acted well. She was thin, but not emaciated, and of firm fibre. After several careful examinations, I was reluctantly forced to the conclusion that my patient's case was not one in which the propriety of an operation could be properly decided against, and having communicated this opinion to her, I advised a consultation with Dr. Mott. After a thorough examination of the case, in which the difficulty of determining the existence and extent of pelvic adhesions was recognised as the only decidedly un-

favorable feature in view of an operation, it was determined that an exploratory incision should be made on the linea alba, large enough to admit the hand, and that in this manner the extent of the adhesions should be ascertained. If the tumor should be found generally adherent to the pelvis, the operation was to be at once relinquished; if otherwise, its removal was to be effected.

Dr. Mott considered her, on the whole, as a good subject for an operation, and that her general condition was favorable to its success.

When the result of the consultation was made known to our patient, she expressed the most undisguised satisfaction, and from this time forward I had some difficulty in reconciling her to the delay which it was thought advisable to insist upon, in order that she might be placed in a condition most favorable to the success of the operation.

The use of the iodide of iron was persisted in, as it had already diminished the vaginal discharge, as well as the frequency of the pulse.

I took occasion at this time to reiterate to her, and also to her friends, in strong terms, the extreme danger to which she would be subjected by the operation, in the most favorable view of her case. Her answer was always the same; that she was "fully prepared for any event." During our whole intercourse I maintained towards her a tone of extreme reluctance and regret, which indeed, I truly felt; that she had imposed upon me a task of such painful responsibility; but, being convinced that the course determined on was right and justifiable, I was not disposed to shrink from carrying it out.

At my request, my friend, Dr. T. F. Cock, was now added to the consultation. After a full investigation of the case, he coincided in the course which had been agreed upon. He made a physical examination of the heart and lungs, and found no evidences of disease of those organs, with the exception of an anæmic murmur accompanying the first sound of the heart.

On the 12th of November, every thing being in readiness, and the patient's condition having evidently improved, the operation was performed. Her pulse was now but 84, and there was no perceptible vaginal discharge.

Chloroform was administered, in an adjoining room, by Dr. Cock, and the temperature of the apartment was duly considered. I was also assisted by Drs. Mott, Herriot, Isaacs, J. R. Wood and A. B. Mott. A male silver catheter was introduced into the urethra, and, as anticipated, the bladder was found to be almost entirely without the vulva, and containing a trifling amount of urine. An incision, about five inches in length, was made through the linea alba, extending from the umbilicus downwards, and the hand introduced through it into the peritoneal cavity, and well downwards into the pelvis; the surface of the tumor was felt everywhere round and smooth, and free from all connections, with the exception of an apparently slight attachment of the intestines, above and to the right, which had been previously expected, and the left, broad ligament, the pedicle by which it was attached to the uterus. Dr. Mott having also introduced his hand, recognised the same condition of parts; and it was immediately determined to proceed to the removal of the tumor. The abdominal incision was prolonged upwards, about four inches farther, when it was found that the bulk of the tumor could escape through it. This it did entirely, bringing with it a portion of the intestines, of which the mesentery was found to be adherent, over a space of about three square inches, to the upper part of the tumor, on its right side. These adhesions were dissected from the tumor, as closely as possible to its surface, and the bleeding vessels, which were unusually numerous, committed to the charge of Dr. Wood, who temporarily commanded them by pressure. On examining the pedicle of the tumor, which consisted of the broad ligament of the uterus, with its contained vessels, and the Fallopian tube, we were struck by the size of several enormous veins, as large as an ordinary finger, converging from the surface of the tumor towards the pedicle. My design was now to tie the entire pedicle, which was about three inches in width, by the application of several successive ligatures, close to the tumor, and then to remove it. In drawing the first ligature tight, the coats of one of these enlarged veins, which were unnaturally thin, gave way, and a considerable gush of venous blood followed; the size of the tu-

mor, the management of which required both hands of one of my assistants, together with the shortness of the pedicle, which was almost concealed by the mass, rendered it impossible, without some little delay, to control the hemorrhage, and cut through its attachments; and during this time the exposure of the intestines, and the loss of blood, which was estimated, in all, at about ℥xij., gave rise to a considerable amount of prostration. The oozing from the mesenteric attachment was, also, somewhat obstinate, and required the use of six ligatures before it was entirely controlled; these were of the finest silk, and their ends were both cut off close to the knot. The wound was then brought together by means of large "insect pins," and the twisted suture, with intermediate strips of adhesive plaster, accurately applied. A compress and bandage completed the dressing.

The patient's pulse, at this time, was about 120, and very feeble, and the surface cool. The influence of the chloroform had been allowed to subside, and there was a good deal of pain complained of, which seemed to be caused principally by the strangulation of the broad ligament.

She was placed comfortably in bed, and ten drops of Magendie's solution of morphine, administered in ℥ij. of brandy. This amount of morphine and brandy was repeated every half hour, until half past three o'clock, P. M., when she became tranquil, with a pulse of 82, and small, but reaction had evidently commenced. She still complained much of thirst, and beef tea was given in small quantities, with ice. At 7 o'clock, P. M., reaction was entirely established; the pulse was 94, and fuller, and the surface warm; very slight complaint of pain. The beef tea exciting disgust, toast water was substituted for it.

At half past ten in the evening of the day of the operation, the pulse had risen to 100, and was fair in quality; the patient is disposed to dose; has no pain; thirst continues; she suffers much occasionally, from eructation of wind, with which the stomach is distended. The abdomen is resonant throughout, and there is some serous oozing from the lower angle of the wound. Her skin is warm and natural, and the pupil not materially affected by the morphine.

The eructation or gulping of wind became somewhat annoying, and for its relief a small quatity of Hoffman's anodyne was given several times during the night; and after its use vomiting took place, for the first time since the operation. The morphine was repeated at 11, 2½ and 5 o'clock, the pulse continuing to increase in frequency, with considerable anxiety, but no positive pain.

At 10 o'clock, on the morning of the 13th, her condition was as follows: pulse, 130, small and weak; respiration thoracic, 38 in the minute; decubitus dorsal, legs drawn up voluntarily; extremities rather cool; expression of countenance unpromising; increased anxiety; occasional but slight restlessness; no pain; sense of increased debility. Eructation of wind continues troublesome; tympanitic distension of abdomen increased; complains of pain on pressure at its lower part. She passed water without assistance twice during the night, and has no return of the vomiting.

Equal parts of brandy and strong beef tea were directed in the quantity of ʒj. each hour, with 10 drops of sol. morphine every third hour, with artificial heat to the extremities. Ice internally.

At 3½ P. M., pulse more frequent and feeble; constant thirst; greater prostration. Stimulus increased as much as possible, morphine being discontinued.

7 P. M. Still sinking; occasional delirium. Continue stimulus.

Death took place at 2 o'clock on the morning of the 14th, 39 hours after the operation.

At 11 o'clock of the same day, 8 hours after death, an examination of the body was made by Dr. Isaacs.

The abdomen was very much distended with gas, in consequence of which the edges of the wound had been forced apart at one or two points; elsewhere adhesive union was evidently progressing. On removing the points of suture and enlarging the wound, tolerably firm fibrinous adhesions were found to exist uniformly between the parietes of the abdomen and the distended intestines, and also between their folds. The surface of the peritoneum presented very slight traces of vascularity. At the point where the ligatures had

been applied to the broad ligament of the uterus, pus was found deposited to the amount of two or three drachms, surrounded by adhesions. About half a pint of serum, slightly tinged with blood, was found in the cavity of the pelvis. There were no coagula discovered.

The uterus was removed. The mucous membrane around the os presented traces of vascular congestion, and was rough from the presence of enlarged glandulæ Nabothi, but there was no ulceration detected. On laying open its cavity a minute polypous growth of soft consistence was found adhering by a slender pedicle to its fundus. The organ was otherwise healthy.

The remaining viscera in the cavity of the abdomen, as far as examined, exhibited no further evidences of disease.

In regard to the cause of death, which was evidently an intense and overwhelming peritonitis, I can only regret that the prostration of the vital powers consequent upon the operation did not permit a trial of a more liberal use of opium as a remedy.

It will be noticed that the hemorrhage to which the patient had been subject was attributed to the presence of a polypus in the cavity of the uterus, and not to ulceration of its cervix, as supposed.

The weight of the tumor removed is about eight pounds; it is composed entirely of the left ovary. The nature of the disease I have not yet taken means to determine; from the elastic and semi-fluctuating feel which the tumor presents, as well as from the appearance and microscopical character of certain portions of its substance examined by Dr. Isaacs, I should judge it to be not benign. You notice that its inferior portion has the general shape of the cavity of the true pelvis, into which it was so firmly pressed during life, but that it is everywhere smooth, and presents no marks of adhesions.

[The tumor was afterwards laid open by Dr. Markoe, and presented a magnificent specimen of encephaloid cancer, or true fungus hæmatodes.]

ART. V.—*The Surgical treatment of Epilepsy, with statistical tables, comprising all the recorded cases of Ligature of the Carotid Artery: and also of Trephining the Cranium by American Surgeons.* By STEPHEN SMITH, M. D., late Assistant Surgeon to Bellevue Hospital.

There is no disease, the treatment of which is more justly obnoxious to the charge of empiricism than epilepsy. In proof of this, we have but to consider the multitude of remedies which have at various periods been vaunted, either as specifics or as efficient in the cure of this disease, and the character of that class of practitioners who have in every age claimed the greatest success in its treatment. These remedies have always comprised a large share of the known materia medica of any given period, while the specifics have varied according to the theories which have prevailed in each succeeding generation, or the conceits of the mountebanks, priests or charlatans who have assumed the office of physician. Hennen, who published his *Analecta Literaria Epilepsiam Spectantia*, in 1798, devotes one hundred and fifty quarto pages to the remedies for epilepsy, and the last half century has added not a little to this list. "The Saltpêtrière," remarks Esquirol, "contains upwards of 400 epileptic patients, and I have employed, but unsuccessfully, all the boasted remedies for that disease." It is not strange that amid the uncertainties of this infinitude of medicinal agents, the means which the art of surgery affords to meet some of the indications of this disease, early attracted the attention of writers on this subject. And it is with reference to the surgical treatment of epilepsy, and more especially the operations of trephining and ligature of the carotids which have from time to time been resorted to, that we propose to make some observations in connection with the tables appended to this article.

Setons, Issues, Cauterizations, Moxas.—The *seton* and *issue* have been recommended by nearly every writer on this disease. They are generally directed to be inserted in the nucha, but the insides of the thighs and arms have often been found preferable situations. Hippocrates, however, cured a case by an issue on the crown of the head; and Tulpius re-

cords a similar instance. It is still practised by many physicians. Lusitanus (*Prax. Admir. l. i. obs.* 22) advises their application to the seat of the aura, and this course is approved by Rochard and Locher. An interesting case of this kind is published by Dr. Isaac Parish.* The patient, aged 20, received an injury to his head, which was followed by convulsions. These fits continued to recur for more than a year, when Dr. P. made an issue on the seat of the injury, which was tender to the touch; a discharge was kept up for seven weeks, during which he had no return of pain or convulsions. He was seen at the end of three years, and was then enjoying good health. The *actual cautery* applied to the nape of the neck, the occiput and even the vertex, is recommended by Aretæus, Celsus and other early writers. Piso asserts that he cured an epileptic person of 40 years of age, by applying a cautery near the coronal suture; and Kempfer says, that in Asia, the same was frequently tried with very good success. Willis, Van Swieten, De Hæn and others, have reported favorable results from its employment. M. Andral advises its application to the extremities in preference to the nucha or occiput. Dr. Fievee has published in the *Gaz. des Hopitaux*, (1841,) some cases of epilepsy cured by severe cauterization with caustic potash. In an epileptic of fifteen years standing, he made nineteen deep and long cauterizations on the neck, on each side of the cervical and dorsal vertebræ, in series of four each time, and at intervals of six weeks; the patient remained free from the disease at the end of three years. *Moxas* have in a measure superseded the cautery, and have received the sanction of many of the most experienced writers, such as Esquirol and Larrey; the former directs their application along the cervix and spine, from the belief that the disease is often located in the medulla oblongata and spinal cord; and the latter employs them after local depletion of the vessels of the head.

The principles of treatment by these forms of counter-irritation was doubtless suggested by the observation that epileptics are often relieved by the occurrence of ulcers or suppurative discharges on some parts of the body, and frequently

* *Phil. Med. Examiner*, 1843, p. 14.

entirely cured by accidental burns. Some interesting cases illustrative of this have been reported. Van Swieten relates the case of a "French nobleman, who, being troubled with an epilepsy, took a journey into Italy in order to consult the most skillful physicians there; but being plundered by robbers on the road, and very much wounded, he was left for dead; besides other wounds, he had received a very large one in his forehead, which carried off a great part of the bone. After a long time he was cured of this wound, and at the same time was freed from his epilepsy."* A case is reported by Dr. Marshall where a girl, eleven years old, who had been subject to epilepsy for two years, fell into the fire and burnt her left arm from the elbow to the extremities of her fingers. She lost considerable blood from the ulceration of an artery, but the wound healed after free suppuration, and she recovered not only from her disease, but regained her intellectual faculties, which had become much impaired.† Dr. Green recorded a somewhat similar case, in which the epileptic attacks were suspended by a burn on the sole of the foot.‡ A still more remarkable instance is related by Dr. Bona, in *Hufeland's Jour.*, 1827. A man, 41 years of age, had been subject to epilepsy for thirty years; the original cause unknown. Being left alone in a room with a fire, he was seized with a fit and fell under the grate, severely burning his left thigh. Upon the healing of this sore, which suppurated freely, he remained entirely free from attacks of epilepsy.

Operations on the Scalp.—Scarifications of the scalp, particularly of the occiput, are advised by Celsus, and have been often practised; as a means of local depletion and counter-irritation they are frequently serviceable. Sir Everard Home‖ was accustomed to make deep incisions of the scalp in certain cases of epilepsy, in which there was a painful and tender spot at some particular point; after dividing the integuments and pericranium freely down to the bone, he dressed the wound with lint and allowed it to heal slowly with sup-

* VAN SWIETEN'S *Commentaries*, vol. x. p. 425.

† *Med. and Phil. Register*, vol. iii. p. 358.

‡ *West. Jour. Med. and Phys. Sci.*, vol. iii. p. 209.

‖ *Trans. Soc. for Imp. of Med. and Surg. Knowledge*, vol. iii.

puration. He most frequently found the pericranium morbidly sensible, and considerably thickened, and in some of the cases indurated and approaching to the structure of cartilage. The success of this treatment was variable. Tissot pursued a similar mode of treatment. Pouteau and Gervais relate cases cured by this practice. Akin to this form of treatment was that introduced by Dr. Wallis, of making *long incisions* of the scalp; many cases are reported of its success, but it has not been very frequently resorted to. Dr. Blackmore has more recently practised deep incisions, as approved by Home, but without limiting himself exclusively to those instances where the scalp is tender. "I would submit," he says, "that it should not be restricted to such a condition, and that it might be extensively employed as a most efficient means of local depletion."*

In a peculiar and severe case of epilepsy, induced by an injury to the head, Prof. Hamilton, of Buffalo, performed the following operation: "The operation consisted in nearly circumscribing each of the cicatrices, separately, by a circular incision extending to the bone, and then dissecting it up clean from the cranium, leaving the circular flap thus elevated, attached only at one point, of about an inch in breadth, through which it might continue to derive its support. My object was twofold; first, to cut off, as completely as possible, the nervous communication between these cicatrices and the general system; and second, to afford me an opportunity to trephine if the skull should be found to be depressed. There was, however, no evidence that the skull had ever been injured; I therefore completed the operation by simply replacing the flaps. He was immediately and for a short time relieved of nearly all the unpleasant symptoms from which he had so long suffered."† In a letter to Dr. H., dated about three months after the operation, this patient reports himself "greatly benefited; indeed, I do not hesitate to say that I am permanently cured." But we have since learned that upon the completion of the healing process, and the re-cicatrization of

---

* *Lond. Med. Gaz.*, March, 1845, p. 728.

† *Buff. Med. Jour. and Rev.*, vol. v. p. 460.

the wound, the disease returned in, if possible, a more aggravated form. Dr. McClellan, in a somewhat similar case, dissected out the cicatrix, which was formed over the principal branch of the frontal nerve, and the disease never recurred.*

Tracheotomy.—This operation was first suggested by Marshall Hall, who considered, that as an attack of epileptic or other convulsions implied closure of the larynx, with expiratory efforts, the attack of convulsive epilepsy would be prevented by tracheotomy. This operation has been performed by Mr. Cane, under the following circumstances:—"A boatman, aged twenty-four, who had become subject to violent fits of epilepsy, one of which had just occurred in so extreme a form as to leave him in a state of deep apoplectic coma and asphyxia, inspiration being performed only by seldom and short catches, whilst the veins of the head and neck were everywhere visible and greatly distended. This state had continued nineteen hours. Feeling convinced, observed Mr. Cane, that the patient must shortly expire, and that the root of the evil was in the closure of the larynx, I at once proceeded to open the trachea, a matter of no small difficulty, on account of the twisted state of the neck, the engorged state of the vessels, and the constant action of the muscles. The operation of tracheotomy was performed; and the tracheal tube is kept in the trachea to the present time. The relief to the patient was immediate; the air passed into the lungs, the state of spasm subsided with the turgid condition of the head and neck, and the patient soon recovered his sensibility. This was not the only gratifying result, although the poor man had experienced his epileptic seizures in increasing violence during seven or eight years, and recently thrice a week; he had, on April 1st, during two months, had no return of them."† This man was heard from still later, and was free from epileptic seizures.

Amputation.—Amputation of the extremity, which is the seat of the aura, has also been practised. Tissot relates an instance in which he removed a toe; a case where the finger

---

* EBERLE's *Practice. Edited by* GEO. MCCLELLAN, M. D., vol. ii. p. 63.

† *London Lancet*, July 12, 1851

was amputated, but without any decided relief, came under our own observation. Frank records a case in which the testicle, the seat of the aura epileptic, was extirpated.

Operations on the Nerves.—The *division* of a principal nerve, leading from the seat of the epileptic aura, has long been practised; but its importance, as a curative procedure, is variously considered by writers. The principle of treatment in these cases is, that the trunk of the nerve is diseased, either from injury or some other cause, and its division destroys the medium of communication between the affected part and the great nervous centres. There is no doubt that in many cases this operation is indicated, and the complete success which has often attended its performance entitles it to consideration; but the cases in which it is applicable require careful discrimination. Van Swieten relates the curious case of a female, 38 years of age, who had been twelve years subject to epilepsy. "The paroxysm always began in the leg, about the lower part of the gastrocnemii muscles, immediately it flew up to her head, and then she fell down violently convulsed and foaming at the mouth." A physician who was present during the time of a paroxysm compared the leg affected with the other, and although he could see no difference between them, boldly thrust in a scalpel to the depth of about two inches, and in the bottom of the wound found a hard, cartilaginous body, resting upon the nerve. Upon removing this the patient recovered from her fit, and was restored to her former vigor of body and mind. Portal mentions the case of a woman who was cured of epilepsy by the removal of a tumor which had formed on the nerves of the thumb. The slightest pressure upon it had given pain and frequently brought on epileptic convulsions. The following is the history of a case in which Sir Astley Cooper *exected* a portion of the nerve. The man had received a severe blow on his thumb, after which he had the following symptoms, which had lasted for several months: "Uneasiness in the parts; pain extending up the arm in the course of the radial nerve; also to that side of the neck, accompanied by a rotatory motion of the arm inwards; occasional loss of sense and volition, so as to occasion him to fall, but without any strug-

gle; he remained insensible for a few minutes and then recovered, excepting that the attack left some pain in his head. As the man had recourse ineffectually to a great variety of internal remedies and to electricity, I recommended him to submit to the division of the nerve; and making an incision upon the outer side of the radius, opposite to the insertion of the supinator radii longus, I laid bare the nerve, and putting a director under it, I removed a portion, which measured after its removal five-eighths of an inch."* This man recovered. Aston Key excised an inch of the ulnar nerve, in a case in which the aura began on the inside of the arm above the elbow, but without effecting a cure. Dr. Holston, of Ohio, removed a portion of necrosed bone, that by irritating the nerves in the popliteal region caused epileptic convulsions, and they ceased entirely. In another case, where the fits began with cramps of the three outer fingers, he divided the ulnar and median nerves, but the operation gave no relief. In reference to this operation, Swan thus concludes: "Seldom, therefore, is the operation now practised, except when it is dependent upon an injury, or when a nerve has become implicated in a tumor. Cases do now and then occur in which relief has been thus obtained, but it has not often been either perfect or of long duration; and the part the nerve supplied has, from the want of nervous influence, become exposed to injuries from slight causes, and even to mortification. Notwithstanding all these discouragements the operation should be performed when no other disease is present, and a trial of the usual remedies has failed of giving relief."†

Operations on the Arteries.—Based upon the theory "that the immediate cause of the paroxysm of epilepsy is a disturbed and excited state of vascular action in the brain, alteration of structure where it exists, acting as a predisposing cause only, and giving the tendency to a recurrence of the paroxysm from time to time, according as any exciting cause

* *Prin. and Prac. of Surg. By* SIR A. COOPER. *Edited by* A. LEE, M. D., vol. i. p. 471. Lond. 1836.

† *Diseases and Injuries of the Nerves.* By F. SWAN. London, 1834.

happens to be applied, or when any occasional increase of irritability on the vessels of the part takes place,"* are the various operations which have been performed upon the arteries which supply the cranial region. The first of these which we notice, is contained in the report made to the *Academy of Medicine, Paris*, by M. Rouchoux, upon a paper drawn up by M. Pereira, on the treatment of epilepsy by l'arteritome epicranieuse. It consists of obliterating by *sub-cutaneous incision* at their origin, the different arterial branches from which the ramifications spread upon the pericranium in numerous capillary vessels, and establish anastamoses with those of the brain, after having traversed the cranium and its membranes. The obliteration prevents the blood not only from arriving at the encephalon in sufficient quantity to cause *congestion*, but produces a kind of atrophy which renders the return of the fits impossible. This theory appeared to M. Rouchoux inadmissible; he did not think that congestion determined to the encephalon is necessary for the production of epilepsy, nor did he think the remedy could be employed to prevent the development of the collateral arteries and their anastamosis.† The following is the history of a case of epilepsy in which Velpeau *ligatured* the temporal and facial arteries.‡ A man, 36 years of age, who had been affected with epilepsy seven years, was admitted into La Charité. The attacks had occurred eight or ten times in a month, but daily for the last three months. On the third day after admission, Velpeau tied the two temporal arteries; on the same day patient had a slight fit, but on the succeeding day was tranquil. Several days after this surgeon tied the two facial arteries, having previously compressed them for a time. The patient passed from under observation in about two weeks after the last operation, having had but one fit in the interval. The result of this operation is unknown, but it was probably unsuccessful.

The most considerable operation that has yet been performed on the arteries for the cure of this affection is *ligature of the carotids.* It had long been known that pressure upon

---

* *Clutterbuck, in Lond. Lancet*, vol. xii. p. 355. † *Psychological Journal.*

‡ *Bulletin General de Therapeutique*, 1842.

these large arterial trunks has the effect both to prevent an expected paroxysm and to arrest it during its continuance. This course has been recommended by Parry, Bland, Malapert, Earle and others; and although the permanent obstruction of the carotids by ligature was advised by Earle, this operation seems to have been quite original with those who first performed it. Hitherto the credit of being the first to ligature the carotid for epilepsy has been ascribed to Mr. Preston, Assistant Surgeon in the Madras Service, East India, whose cases are reported in the *Trans. of the Med. and Phys. Soc. of Calcutta.* But by reference to the statistics of this operation, contained in the table which follows, it will be seen, on comparison of dates, that this gentleman was anticipated in the performance of this operation, nearly *four years*, by an American surgeon. Previous, however, to this, the operation had been twice performed upon epileptic persons, but without regard to the condition of the patient. The first was by Boileau, who tied the carotid on an epileptic who had attempted suicide. The result is stated in the report to have been successful in relieving him of convulsions; but Velpeau, in speaking of the nature of the diseases for which the carotid has been ligated, remarks: "The patient operated upon by M. Boileau, and who was epileptic, continued nevertheless to have paroxysms after the obliteration of the vessel."* Dr. McClellan, of Philadelphia, tied the carotid in a case where a vascular tumor, following an injury to the head, seemed to be the cause of the epilepsy. This case promised to be successful at the time of the report; but in a note made some time subsequently, the epileptic attacks are stated to have returned at the end of six months, but less violently than previously. In a note to *Eberle's Practice*, by the editor, Dr. McClellan, it is stated that "Dr. McGill, of Hagerstown, is said to have performed this operation repeatedly, and in one case upon both the common carotids at two successive operations on the same subject. Whether his success was permanent, or merely temporary, I have had no opportunity of ascertaining."† It has also been

* Mott's Velpeau, vol. ii. p. 246.

† Eberle's *Prac.* (*Op. cit.*) vol. ii. p. 63.

performed by Dr. Parker, in a case in which he had already failed in the use of the trephine, but without affording more than temporary relief, the fits returning at the end of six months. Dr. Morrogh, of New Brunswick, New Jersey, we learn has ligatured the carotid for the cure of epilepsy, but with what success we do not know.

From the following table we learn the result of seven cases in which this operation was performed, and in but two instances did it prove successful. In three cases both arteries were tied, in one with an interval of a month, with no relief whatever; the second, an interval of three months, no relief; the third, with an interval of seven months and complete success. Of the five patients selected for this operation all were males, their ages varying from 18 to 51 years; three were stout and plethoric, two spare in their make; the successful cases being from each class. Causes unknown; therefore all were idiopathic. The duration of disease varied from five to nine years.

In regard to this operation as a measure which ought generally or even occasionally to be adopted, the facts here exhibited seem to disprove. It has, however, the sanction of distinguished names—Earle and Trousseau. The latter gentleman, who has often resorted to compression of the carotids in severe cases of convulsions, expresses the most decided opinion in favor of the ligature. "I would not be rash enough," he remarks, "to advise the ligature of the carotid in an epileptic patient whose life was threatened; but if I were afflicted with this horrible disease I would certainly demand the operation for myself. When a surgeon is applauded for applying a ligature around the carotid for the purpose of curing a tumor of the orbit, he should not be accused of rashness if he were to employ the same operation for the cure of epilepsy." The actual results of the operation, however, do not sustain the confidence here expressed for it. There may be cases, resisting all treatment, in which cerebral determination appearing to be the proximate cause, and impending idiocy the sure consequence, which would justify the ligature of the carotid as a last resort; but whoever appreciates the magnitude of the operation, and its often disastrous effects, will be

slow even then to adopt it. Velpeau continues in the note above cited, "here was a fact ascertained (the failure of Boileau's case) which should have deterred Mr. Preston from unnecessarily exposing the life of an epileptic in whom he

Sex.	Age.	Condition.	Cause.	Symptoms.	Duration.	Date of Operation.
1. M.	36		Subsidence of a skin disease.	Had pain in the head from infancy; had first epileptic attack 8 years since. In attempting suicide, cut the thyroid artery.	8 years.	July, 1822.
2. M.	16		Thrown from a horse, striking right side of head.	Soon after epileptic attacks ensued: 12 months since left side became paralyzed: a hard, painful tumor appeared above right ear: a vascular fungus.	3 years.	May, 1826.
3. M.	22	Robust. Very intemperate.	Unknown.	Fits occur only during sleep: has them every night.	9 years.	Mar. 1827.
4. M.	25	Robust. Intemperate.	Exposure of head to sun.	Has had fits once a fortnight for five years; often induced by intemperance.	5 years.	Feb. 1831.
5. M.	51	Short and stout.	Unknown.	Has six or seven fits per month. Has headache. Has lost the use of half his body, and power of vision.	6 years.	Aug. & Nov. 1831.
6. M.		Tall, thin & nervous: very intemperate.			8 years.	
7. M.	18	Sanguine temperament.	Unknown.	Subject to epilepsy from childhood. Fits became more frequent at 12 years of age. Disposition irritable.		Aug. 1838, & Mar. 1839.

Trephining.—The earliest author who has noticed trephining the cranium in epilepsy, and the circumstances in which it may be performed, is Aretæus. Cælius Aurelianus speaks of its having been performed, but does not approve of it. The operation has been alluded to by most subsequent writers on this subject, and uniformly recommended in those cases where the disease depends upon an injury to the head

vainly attempted to effect a cure by ligature of the carotid. The failure of Mr. Liston, also, shows how irrational it was to place a ligature upon the carotid for the purpose of relieving a simple neuralgia."*

Operation.	Result.	Remarks.	Authorities.
Tied carotid to stop hemorrhage.	Had no more convulsions.	Attributes the result, 1st, to the hemorrhage. 2d, the resistance to the passage of blood to the head. 3d, to the low diet enforced.	M. BOILEAU, *Jour. Univ. des Scien. Med.* 1825.
Tied right carotid below bifurcation.	Tumor began to diminish. In 2 weeks was about, free from pain, and paralysis diminishing.	Relieved for six months; when fits returned, but with diminished violence.	DR. MCCLELLAN, *Amer. Med. Rev. and Jour.* vol. iii. 328.
Tied common carotid, as directed by C. Bell.	Had but two fits during next ten days; began to drink, and fits returned.		DR. BECTON, *North Am. Med. and Surg. Journ.* July, 1827, p. 88.
Tied carotid near larynx: face became livid.	Had no fits for two months, and resumed his business.	Drinking no longer affected his head. Seen at the end of a year.	MR. PRESTON, *Trans. Med. & Phys. Soc., Calcutta,* vol. v. p. 259.
Tied right carotid first; then left.	2d day could move both arm and leg. 13th. Had return of fits, and paralysis.	Nov. 14th. Tied left carotid. Improved, but still subject to fits. Relief after first operation marked. Thinks there was organic lesion of brain.	IDEM. *Op. Cit.* vol. vi. p. 396.
Tied both arteries; interval a month.	No relief to convulsions.	Had always suffered pain and heaviness of head, which were slightly relieved.	IDEM. *Op. Cit.* vol. vi. p. 409.
Tied right common carotid; 6 months after, the left.	Sensible relief after first operation. Entirely relieved after second. Seen at the end of two years.	Found left carotid much enlarged.	DR. T. H. HAMILTON, JR. *Buff. Med. Jour.* vol. ii. p. 119.

resulting in collections of matter in the brain or a morbid state of the cranium. Previously, however, to the present century the records of surgery furnish us but occasional instances of its successful performance. Abernethy, Rhodius, Marchettis, VanDerWeil, La Motte, Lysons and others,

* *South. Med. and Surg. Jour.*, vol. ii. p. 432. *From Jour. des Connais. Méd. Chirurg.*

mention cases in which the trephine was resorted to with success, but so scanty are these reports, scattered over a long period, that we must conclude that this operation could have received but little attention. Bœrhaave advises it in cases of epilepsy arising from injuries of the head, and Van Swieten alludes to a case in which it failed. Tissot* strongly recommends it in cases where the disease is supposed to depend upon spicula of bone irritating the brain, of which he gives several instances. Nor does this operation seem to have obtained more favor among British than continental surgeons; solitary cases are found, at long intervals, in British journals, but they are too few in number, even in the aggregate, to justify a conclusion as to the propriety of the operation. Mr. Cline operated successfully in 1800, Mr. Birch in 1804, but not with entire success; and occasional subsequent examples may be gleaned from the journals.

But when we come to consult the records of medicine in our own country, and compare the frequency and success of this operation at home and abroad, the contrast is highly flattering to American surgery. We do not speak unadvisedly in asserting that more successful cases of trephining in epilepsy are recorded in this country during the last half century, than can be found during the same period in the whole range of European medical literature. In collecting some statistics of this operation we have, therefore, confined our attention to our own periodical literature, which furnishes us a sufficient number of cases, not only to establish the importance and feasibility of the operation, but our claim to its American character.

Prof. Dudley, of Transylvania University, who was the first to introduce this operation to the notice of American surgeons, in an excellent article on *Injuries of the Head*, published in the first volume of the *Transylvania Jour. of Med.*, remarks: "A fracture and depression, however slight in character, in which there may have been no loss either of sensation or volition, with barely momentary effects proceeding from concussion, are not unfrequently followed by distant

* *Traitè de l'Epilepsie.* Par M. Tissot, D. M., &c. Lausanne, 1770.

results so painful and destructive in their consequences, that a train of reflections has been excited, and an operation elicited at our hands, the result of which seems to offer an assurance that important improvements in the treatment of injuries of the head are still demanded, in order to afford all the assistance to which surgical skill may ultimately be subservient." The principal *indications* for a resort to the trephine, either in epilepsy or painful affections of the head, in which it has occasionally been used with success, is briefly, when the disease follows an injury to the head, from which we conclude that depression, a fracture of the internal table, spicula of bone, or a collection of fluid is pressing upon or irritating the brain directly or through its meninges. The plainest indication for the use of the trephine is actual depression of the cranial bones at the seat of injury; for here not only the cause of the morbid condition of the brain is apparent, but its precise location is indicated. As, however, slight depressions are frequently followed by symptoms of greater severity than those more extensive, the amount of depression is not the criterion by which to judge of the necessity of the operation, but the character of the symptoms. "A laboring man in this vicinity received a blow on his forehead thirty years ago, which fractured and depressed the central portion of the bone to an extent sufficient to receive one-half of a large winter pear ,and yet his only complaint is headache and dizziness during the heat of summer. Another case, which is by no means of rare occurrence, is that of a man with a slight fracture of the parietal bone, accompanied by a very partial depression, wherein no unpleasant symptoms were manifest until the fourth day, when epilepsy supervened with death in eighteen hours after."* The same rule may be applied to those cases where epilepsy follows an injury to the head, but without any depression, for it not very unfrequently happens that in such cases the disease depends upon fracture or injury to the internal table by which spicula of bone are thrust into the brain, or a low grade of inflammation is induced, terminating in the formation of some foreign

* PROF. DUDLEY, Op. Citat.

matters. Salmathius* relates the case of a man who received a blow on the forehead above the nose, from which under good treatment he recovered. Nine weeks afterwards, having complained of severe pain in the part struck, he was suddenly seized with epilepsy and died. On opening the head the inner table was found pressing on the brain, beneath which it was in a state of suppuration. Paré, Bonetus and others relate similar examples, and we refer to the following collection for like cases. We might here introduce a multitude of autopsies of epileptics, showing how frequently morbid growths from the cranial bones, or collections of fluids beneath the dura mater at the seat of former injuries, are the causes of this distressing malady, but reference to the examples which follow is deemed sufficient.

The following tables comprise, if not all, very nearly all the published cases of this operation peformed in this country. In addition we may refer to the following cases, of which we are able to obtain no other particulars than the result of the operations. Dr. J. C. Warren has operated twice successfully; Dr. Mott, once successfully; Dr. Gibson, twice, once successfully, once unsuccessfully; Dr. McClellan, once unsuccessfully; Dr. Eve and Dr. Hurt, each once successfully. Prof. Parker, of this city, has both trephined the cranium and ligated the carotid in the same person for epilepsy, with an interval of a few months between the operation, but without relieving his patient. This very interesting case will be published entire hereafter.

In concluding these observations, we confess that the surgical treatment of epilepsy, with the exception of that of trephining, as far as we have been able to investigate the subject, affords to the victim of this terrible disease but little hope of ultimate recovery. Reports of successful cases are found under every variety of operation above noticed; but too frequently, when these cases are followed for years or months even, the relief is not found to be permanent, and the early confidence of the operator in his operation is diminished or lost. And we may here notice with regret the unjustifiable

* Guthrie, *on Injuries of the Head, &c.* London, 1842.

haste of surgeons in reporting their cases, before sufficient time has elapsed after the operation to give a rational opinion as to its success. It has happened to us frequently in this investigation to learn accidentally the failure of operations, where the patient at first so much relieved, was seen at the end of a year, or even six months. While, therefore, we express for the operation of trephining, preference over all other operations for the relief of epilepsy, where the cases are selected, not indiscriminately, but according to the indications above pointed out, we do not place implicit confidence in the result of many cases here recorded as successful. The general want of success in the treatment of this disease arises from our ignorance of its true pathology. Modern science has added but little in this respect to the knowledge of the ancients. When, however, we are able to arrive at the cause, whatever that may be, then and then only can treatment be rational and reliable. It is in this respect that we have confidence in the operation of trephining where the affection is dependent upon injuries of the head, for the exciting cause is absolutely known, its precise location accurately defined, and the plain indication is to remove it by surgical means.

Sex.	Age.	Cause.	Symptoms.	Duration.
1. M.	21	Blow on superior and middle portion of the head when 5 years of age.	Followed by hemiplegia; got better, but pain in the head at length came on; became feeble, liable to faint; fits set in, occurring every three or four weeks; cicatrix of scalp marked.	7 years.
2. M.			Convulsions every 3 or 4 days; severe pain in superior and posterior part of head; small tumors about the seat of pain; scalp sensitive; two depressions discovered.	9 months.
3. M.	23	Kick of a horse when 5 years of age, depressing a portion of right parietal bone.	Enjoyed good health until 15 years old, when epileptic convulsions came on, with loss of health, memory, &c.	8 years.
4. M.	40	Blow on side of the head.	Large cicatrix of the scalp; pain in head, jaw, neck and sides, with convulsions; sense of taste and smell defective.	4 years.
5. M.	40	Blow on posterior and superior part of parietal bone.	Nearly idiotic; seven convulsions, and often twelve per diem.	13 years.
6. M.		Gun shot wound of head.	Bone diseased; cicatrix 2½ inches in length; slight discharge continues from injury; general health bad.	
7. M.	40		Severe pain in side of head; loss of vision on left side; convulsion every 2 or 3 weeks: no depression.	
8. M.	41	Caries of cranial bones, from scrofulous abscess.	Upon healing, followed by dull and heavy pains, and epileptic attacks.	12 years.
9. M.	46	Fracture of frontal bone, from a blow with a piece of iron.	Recovered from injury; but after several weeks had an epileptic attack, which was repeated every month, for a time; has now two or three daily; pain in head and arm of injured side; sight impaired; memory gone; cicatrix and depression discovered.	14 years.
10. F.	50	Window sash fell upon the head.	Intense pain at seat of injury, but no convulsions; no marks of injury.	17 years.

Operation.	Appearances.	Result.	Authority.
Crown of trephine covered the depressed bone.	A spiculum of bone an inch long, protruded from the under surface of the removed piece, entering a large sinus, from which blood issued.	Had a convulsion during operation; no return for 3 years when last seen.	DR. DUDLEY. *Trans. Jour. Med.* Vol. i. p. 2.
Two circular pieces were removed covering this space, in direction of the longitudinal sinus.	Dura mater separated half an inch from brain, by a fluid, and "hard as a board."	Had two slight attacks in three months.	*Idem.*
Applied the instrument over the depressed bone.	A spiculum protruded from inner table half an inch; dura mater defective, and a sinus ran down to petrous bone, size of a hen's egg, from which much serum flowed.	Had two attacks on 2d day, but none after suppuration was established; well at end of 7 months.	*Idem.*
	No abnormal appearance.	Much better on 25th day.	*Idem.*
	Dura mater healthy, but separated one inch from brain by fluid.	Attacks less frequent and milder.	*Idem.*
Applied trephine at seat of injury.	Removed a morbid growth from dura mater.	Cured.	*Idem.* Op. Cit. Vol.
Removed a circular piece from point most painful; operation very painful, and hemorrhage from diploe.	Bone carious, thick and spongy; dura mater healthy; serum flowed freely.	Cured.	DR. GUILD. *Am. Jour. Med. Sci.* Vol. iv. p. 96.
Crown of trephine covered depression.	A spiculum of bone found on under surface.	Patient expressed entire relief on removal of bone; cured.	DR. HAYWARD. *Bost. Med. & Surg. Jour.* June, 1838.
Removed depressed bone, and made a section of frontal sinus.	Bone had a ridge on lower surface; membrane too vascular; portion of inner table of frontal bone separated and forced back upon the brain.	Had return of fits on 25th day, from improper diet; 9 months after, reported himself nearly well.	DR. D. L. ROGERS. *N. Y. Med. & Phys. Jour.* Vol. v. p. 79.
Applied trephine at seat of pain.	Exostosis of inner table $\frac{1}{4}$ of an inch in thickness.	Recovered.	DR. E. H. DIXON. *Bost. Med. & Surg. Jour.* Vol. XXXV. p. 53.

Sex.	Age.	Cause.	Symptoms.	Duration.
11. F.	25	Stroke of the sharp edge of an axe on posterior part of left parietal bone.	Lancinating pains in this part of head, where a cicatrix is felt, and the bone seems to be depressed; general health good; fits come on at uncertain periods, but more apt to concur with catamenia.	20 years.
12. F.		Blow on head with a hoe.	Constant headache, with convulsions.	
13. M.	Ad.	Blow on head with a club.	Wound cicatrized, but convulsions ensued; loss of speech; slight depression detected.	4 weeks.
14. M.	21	Fall of limb of a tree, fracturing right parietal bone.	Convulsions ensued, and have continued; mind impaired; a depression of bone an inch broad, and an inch and a half long, detected.	7 years.
15. M.	28	Fracture of anterior and superior angle of parietal bone, by kick of a horse.	Six years after was attacked with epilepsy; depression at the place of injury; general health good; fits every week.	13 years.
16. M.	26	Fracture of skull, over the eye, from explosion of gun.	Bone exfoliated; constant pain in the head; epileptic fits, an hundred in a month: finally, evidences of insanity.	
17. M.		Struck on side of head by a spent ball.	Recovered and remained well a month, then sickened; had epileptic attacks; slight discharge from head; bone carious.	
18. M.		Struck on head with a cane.	Depression of upper portion of occipital bone; convulsions daily.	9 years.
19. M.	27	Thrown from the back of an ox, against a wall.	Loss of power in right leg and arm, and speech; recovered in 3 months; suffered much headache; six years ago had an attack of epilepsy, upon the healing of ulcers of legs; are now often repeated; depression in left parietal bone.	19 years.
20. M.	14	Thrown from a cart, injuring the sinciput.	Epileptic fits followed some time after, gradually increasing in frequency and violence; often had ten or twenty per diem; mind began to decay.	9 years.

Operation.	Appearances.	Result.	Authority.
Removed the depressed bone, and filled the wound with lint; patient under influence of chloroform.	Dura mater covered with false membrane; no diploe; cicatrix contained the occipitalis major nerve.	Wound suppurated and granulated freely; entirely relieved; seen at end of two years.	DR. HOLSTON. *West. Lancet.* Vol. ix. p. 85.
Trephined at seat of injury.	A splinter of bone an inch long had passed through longitudinal sinus.	Relief to headache; longer intervals between convulsions.	*Ibid.*
Could not raise depressed portion.	Found a fracture, clot of blood, an oz., on dura mater, which was villous.	Cured.	DR. POPE. *St. Louis Med. and Surg. Jour.* Vol. vii. p. 293.
Removed depressed bone by applying instrument twice.	No growth on under surface; bloody serum escaped, followed by a gush of blood, which was restrained by pressure; left arm and leg paralyzed.	Paralysis disappearing; no convulsions; health better at end of a month.	DR. YANDELL. *West. Jour. of Med. and Surg.* Vol. i. p. 384. N. S.
Applied the trephine behind the scar.	Dura mater healthy; 8 oz. of serous fluid escaped from a puncture through membranes.	Wound healed quickly; no return of disease 2 months after.	DR. CADWALL. *Bost. Med. & Surg. Jour.* Vol. xxiv. p. 369.
Applied trephine at seat of injury.		Immediate relief. No note later than date of operation.	DR. HAYWARD. *Bost. Med. & Surg. Jour.* Vol. xxviii. p. 320.
Applied trephine at seat of injury.	Inner table broken down, and resting on meninges: dura mater thickened: matter flowed out.	"Recovered."	DR. TROWBRIDGE. *Bost. Med. & Surg. Jour.* Vol. xxviii. p. 345.
Applied trephine at seat of injury.	Both tables fractured and depressed, the inner much thicker from deposition of ossific matter.	Suppurated freely for three months; healed, and he "entirely recovered."	*Idem.* Op. Cit.
Applied instrument over depression.	Serum flowed freely; bone $\frac{3}{4}$ of an inch thick at one point, $\frac{1}{4}$ at the other, the thicker part being that depressed; dura mater healthy.	Felt relieved when the water escaped; convalesced. No note of him later.	DR. HAYWARD. *Bost. Med. & Surg. Jour.* Vol. xxvii. p. 265.
Applied trephine at seat of injury.	A spiculum of bone on under surface, pressing dura mater, which was healthy.	Attempt to close wound, or improper diet, induced epileptic attacks. Entirely recovered; seen at end of 8 months.	PROF. PANCOAST. *Phil. Med. Exam.* Nov. 1849, p. 648.

Sex.	Age.	Cause.	Symptoms.	Duration.
21. M.	23	Fracture of skull from a falling branch of a tree.	Convulsions always at night; a depression exists at inferior and posterior angle of parietal bone, the seat of all his pain.	10 years.
22. M.	24	Kick of a horse when a boy.	Epileptic attacks ensued, and latterly grew more frequent; begin with excessive pain at seat of injury, which is tender; depression at inferior and posterior angle of parietal bone, two inches long and nearly an inch deep.	
23. M.		Penetrating wound of frontal bone, with a pitchfork.	Paralysis of right side; loss of speech followed, from which he partially recovered in six months; had an attack of epilepsy; fits recurred every eight or ten weeks, for a year, when they became more frequent.	6 months.
24. M.	14	Kick of a horse.		12 years.
25. F.	Ad.	Injured by a blow on head when a child.	Suffered much from severe pains in the head; "had nervous spells, not unlike convulsions."	
26. M.	Ad.	Blow on head from a cane.	In about twelve hours had an epileptic attack, which was repeated often, the intervals diminishing; began to be stupid.	3 days.
27. F.	35	Blow on forehead from stone.	Small pieces of bone were removed from wound, which continued to suppurate several months, then healed. 18 months after injury, had convulsions; pregnant; no pain in head or wound; relieved by bleeding, &c.; several months after, had another attack, and finally a third; cicatrix painless, depressed.	18 months.

Operation.	Appearances.	Result.	Authority.
Applied trephine twice, removing a diamond shaped piece from seat of injury.	Three exostoses on under surface, largest ¾ inch thick, and imbedded in the brain; edges of fracture united irregularly, giving a thickness of bone as 1 to 3.	Recovered and enjoyed good health, with exception of "nervous spells."	DR. HOLSTON. *West. Lancet*, Nov. 1850, p. 703.
Applied four crowns of trephine around depression; administered chloroform.	Bone fractured into three pieces, and driven in upon the brain; removed with difficulty; triangular in shape, 3½ inches base, 2½ altitude; dura mater dusky red in centre.	Convalesced without any difficulty. Brain began to pulsate; did not at time of operation. At end of two months was at work and well.	*Idem.* Op. Cit.
Applied crown over the puncture.	Dura mater adherent; fissure of internal plate.	Frequency of fits diminished for a year, then ceased entirely; recovered use of speech and limbs. Seen at the end of five years.	DR. CAMPBELL. *Am. Jour. Med. Sci.* Vol. xii. p. 370. *N. S.*
		Entire intermission of fits for eight months; returned, but in a "strikingly mitigated" form, intervals being long, and paroxysms slight.	DR. WELLS. *Essays on Path. & Therapeut.* By S. H. DICKSON, M. D. Vol. ii. p. 464.
Applied trephine at seat of injury.		Speedy and entire relief. Seen at end of a year.	*Mat. Med. and Therapeut.* By T. D. MITCHELL, M. D. p. 722.
Trephined at seat of injury.	A large coagulum of blood found on dura mater.	Convalesced; had no return of fits. Seen after three weeks.	DR. ELLIOT. *Trans. Jour. Med.* Vol. ii. p. 288.
Two applications of instrument, to include depression.	Bone ⅛ inch thick, from deposit of osseous matter on under surface; dura mater healthy.	Immediate relief: wound healed readily; recovered. Seen at end of a year.	DR. FULLER. *N. Y. Jour. Med. and Surg.* Vol. iii. p. 331.

Sex.—Males, 22. Females, 5.

Age.—Varying from 14 to 50.

Causes.—External violence to the head, 24. Scrofulous caries of cranial bones, 1. No cause known, 1. Not given, 1.

No synopsis of symptoms.

Duration.—Varying from 3 days to 20 years. Less than one year, 4. Between 1 and 5 years, 2. Between 5 and 10 years, 5. Between 10 and 20 years, 8. Not given, 8.

Operation.—In all the cases noted, except one operation, was at the seat of injury.

Appearances.—Thickening of bone in 7. Fracture in 6; both tables, 4; inner table fractured and driven in upon the brain, 2. Spicula of bone, 5. Dura mater healthy, 6; diseased, 8. Collection of fluids, 10; coagula, 2; serum and blood, 8. No morbid appearances, 1.

Result.—Unrelieved, none. Relieved, but not cured, 3. Immediate relief after operation, and no farther note of result, 2. Relieved for one month or under when last seen, 3; between one and six months, 3; between six months and one year, 6; between one and five years, 3; set down *cured*, but lapse of time from date of operation to time last seen not given, 7.

ART. VI.—*Upon the Medical Topography and Diseases of the Isthmus of Panama.* By JOHN A. LIDELL, M. D., of New-York.

THE northern or Atlantic side of the Isthmus of Panama is generally reported to be one of the most unhealthy portions of the American continent. It is generally believed that Europeans and people of our own country going there to reside will suffer more from sickness than in most other tropical climates. This idea is by no means new. Several writers have characterized Porto Bello as "the grave of Europeans." The English fleets, sent at different times for hostile purposes to that portion of the Spanish main, have borne witness to the same melancholy fact. The abortive efforts of the Spanish government to colonize the northern side of the Isthmus of Panama with her own subjects, foreseeing the future commercial importance of that neck of land, and feeling its then present value as the connecting link between

her immense territorial possessions in North and South America, have told the same melancholy story.

At the present time, the greatest obstacle in the way of constructing the Panama Rail-Road is the unhealthiness of the country through which it passes, and this will ever be a serious obstacle to the working of the road after its completion. Speaking in general terms, the services of laboring men taken there from the United States can not be safely counted upon for three successive months. According to my observations, laborers from the United States or Europe may work pretty well for about one month, but before the expiration of the second month one-half of a given force will be either on the sick list or materially enfeebled by sickness already undergone. Before three months have passed away a large proportion will either have died or been sent out of the country as unfit for further labor, and the value of the services of those who remain will have been seriously lessened.

The natives of the isthmus (who are mostly colored people) are not entirely exempt from the ravages of the climate, though they suffer much less than Europeans. A disorder of frequent occurrence among them is a form of remittent fever, the appellation of which, in their vocabulary, is "calentura," or the "hot fever," a name expressive of its most prominent symptom. My opportunities for observation among the natives were limited, but I seldom saw what might be called an elderly person among them. They are also for the most part "mixed breeds," but few of them being either full-blooded Africans, Indians or whites. They are generally rather small in stature, not inclined to obesity, and many present a sickly appearance. I remarked also that the women for the most part became old prematurely. Gentlemen engaged in the Chagres trade have informed me that not a solitary native who was prominently engaged in business at that town only three years ago is now alive. Persons coming to the isthmus from other provinces of New-Grenada are more liable to be sick than those born upon the soil, until acclimation has taken place. The full-blooded negro population withstand the ravages of the climate much better than either the "mixed breeds" or the whites. The following remarks by Dr. Ferguson accord pretty nearly, though not entirely, with my own observations. Says Dr. Ferguson: "To him (the negro) marsh miasmata are, in fact, no poison; and hence his incalculable value as a soldier for field service in the West Indies. The warm, moist, low and leeward

situations, where these pernicious exhalations are generated and concentrated, prove to him congenial. He delights in them, for there he enjoys life and health as much as his feelings are abhorrent to the currents of wind that sweep the mountain top, where alone the whites find security against endemic fevers."

Of the foreign white population resident upon the isthmus, some portions stand the climate better than others. Those born within the tropics suffer least of all. Of the Americans and Europeans, those suffer most who labor under old organic diseases. I remember several patients of tubercular diathesis who had come to the isthmus for the benefit of their health, and in every case the result was most untoward. Such persons invariably, after a brief stay, either died or were compelled to seek prolongation of their days by precipitate flight. I am not acquainted with another country less favorably adapted for the residence of phthisical patients. The excessive humidity of the atmosphere, the constantly elevated range of the temperature, and the abundant noxious exhalations from the soil, conspire to destroy them as certainly as the sword. Those who stand the climate best possess vigorous constitutions, and are not enfeebled by either hardship, vice or disease. Men coming from the Southern and Western States, par excellence the malarious portions of our confederacy, do not possess any advantage over those coming from the Northern and Eastern States. I experienced my first attack of the climate fever about four weeks after my arrival at Navy Bay, and had recurrent attacks every second, third or fourth week while I remained upon the isthmus, which was a period of something more than five months.

But although the Atlantic side of the Isthmus of Panama is very sickly, only a few of the diseases incident to it are suddenly or rapidly mortal. This statement is well illustrated by the fact that of more than one thousand cases of disease treated either by myself or under my immediate observation in the valley of the Rio Chagres, but ten patients died; and I have understood that some physicians present even better results than mine.* Now I have not mentioned this to show the excellence of the doctors upon the isthmus, but to prove that the great majority of the dis-

* In order to avoid misconceptions, the reader should bear in mind that our patients were sent out of the country as fast as they became unfit for further service, always provided they were not too sick. How many or what proportion of them died on the voyage to their homes is to me unknown.

eases there are not immediately fatal. It is true that dysentery abounds, and that congestive fever is often seen, but both of these disorders are generally manageable by treatment. Persons lose their health or their lives in that country, not so often by sudden attacks of acute diseases, as by the insidious and undermining influence of climate, and by frequent and often repeated attacks of mild fever, bilious troubles, and disorders of the mucous membranes. In this way people are worn out gradually, though sometimes pretty rapidly. The greatest misfortune is that they acquire pathological lesions of important organs, particularly of the liver and the spleen, recovery from which is sometimes impossible, and often very tedious, even after they have been removed to a healthy climate, and are surrounded by the most favorable circumstances. It is my opinion that the climate of the northern side of the Isthmus of Panama is not so injurious to most Europeans and Americans in its immediate as in its remoter consequences.

After these general remarks, I propose to inquire into the special etiology of the diseases of that climate. I propose to ascertain what morbific causes are there at work producing in the stranger diseases which he never had before, and diseases which he never would have known in a strictly healthy climate. By so doing, an essential service will, I hope, be rendered to the cause of humanity. The eyes of the whole commercial world are now turned towards the isthmus, because it affords facilities for inter-oceanic communication unrivalled by any other portion of the continent. About five thousand passengers now cross over monthly from Chagres to Panama, or vice versa. By the completion of the Panama Rail-Road, not only will the number of transit passengers be greatly augmented, but the commerce of the southwestern coast and the islands of the Pacific will be turned into this channel. Such a large increase of traffic will attract multitudes of ardent and enterprising men to those shores, and will build up towns and cities. To them the causes of diseased action which are in operation upon the isthmus of Panama, cannot be matters of indifference or unimportance.

Now, speaking abstractly, all causes of disease must be either external or internal. By the external causes of disease, I mean those which surround the individual and act upon him from without; by the internal causes, those existing within him. The last class of morbific agents do not properly come within the scope of the present investigation, for they are about the same in all coun-

tries and in all places. This appears to me so clear as not to stand in need of illustration. It must be agencies existing without and apart from the individual, which produce the disorders that are peculiar to or characteristic of any country or latitude. Now, in the present state of human knowledge, we must search after these morbific agencies in the varying conditions or exalted range of the atmospheric temperature, in the humidity or dryness, *i. e.*, the hygrometric state of the air, and in the admixture with it of noxious exhalations or gaseous poisons. In the prosecution of our investigation the following order will be adopted: I. We will examine into the morbid effects of the atmospheric temperature; II, consider the noxious exhalations or gaseous poisons as causes of disease; and III, discuss the influence of the hygrometric state of the atmosphere upon human health.

But before proceeding further it may be well to place clearly before our minds the general features of the diseases of the isthmus, and this can be best accomplished by presenting the record of the diseases of 382 patients treated by myself in the Panama Rail-Road Company's hospital, at Buyo Soldado, between the 15th of January and the 1st of May, 1851. It should, however, be borne in mind that all of these patients were either Europeans or Americans. That none but persons severely sick were admitted to hospital; that cases such as fever and ague, mild attacks of diarrhœa and dysentery, catarrhs, &c., were always treated under the name of out-door patients, and that the number of the out-door far exceeded the number of the hospital patients.

Climate or remittent fever, with the bilious, gastric, or enteric complication	250	Splenitis	1
Congestive fever	23	Hernia et orchitis ab injuria	1
Dysentery	48	Scleroto-conjunctivitis	3
Diarrhœa	9	Neuralgia miasmatica	1
Muco-enteritis	8	Panaritium	1
Chronic ulcers	2	Insanity and dysentery	1
Incised wounds	2	Cholera spasmodica	1
Inflammatio Genu	1	Diarrhœa and remittent fever	4
Inflammatio manus et pedis	1	Pleurisy	1
Gonorrhœal orchitis	1	Pleurisy and remittent fever	1
Lymphangeoitis et febris bilios	1	Syphilis	2
Enteritis et febris remittens	2	Erysipelas faciei	1
Tuberculoris pulmonum	4	Catarrhus acutus	1
Dysenteria chronica et splenitis	1	Neuralgia miasmatica et otorrhœa	1
Febris remittens et delirium tremens	1	Hypertrophia cordis	1
Abscess	2	Inflammatio fibro-cellalaris pollicis pedis	1
Congestion of the brain by stroke of the sun	2	Febris congestr. et enteritis et dysenteria	1
Concussio cerebri et orchitis ab injuriâ	1	Total	382

I.

Of the atmospheric temperature considered as a cause of disease.—The Isthmus of Panama lies between the eighth and tenth parallels of north latitude, and consequently frost and snow are entirely unknown there. The climate is perpetual summer, and the year is divided into seasons only by the advent and departure of the annual rains. The lowest point at which I saw the mercury stand, and then only on one occasion, was 69° Fahr. The highest point in the shade was 89°. The thermometric record kept at Buyo Soldado gives the following daily averages for the month of March last:

6 A. M.	9 A. M.	12 M.	2 P. M.	4 P. M.	6 P. M.	9 P. M.
74.5°.	80.2°.	84.6°.	84.6°.	83.15°.	80.9°.	78°.

The thermometer used for these observations was carefully suspended where it would be uninfluenced by the sun and wind. The averages for the month of March give a fair idea of the averages for any month in the year. If we had space to publish in extenso the thermometric tables we could show another fact worthy of notice: the remarkable uniformity of the temperature on different days, the comparison being made between corresponding hours. We should also see that the great and sudden changes of temperature, which are constantly occurring in our climate, are never experienced on the Atlantic side of the Isthmus of Panama. This fact, I presume, explains the unfrequent occurrence in that district of inflammations of the serous tissues and of the parenchyma of organs generally. By way of summing up we may remark, that the most prominent features of the atmospheric temperature in that country are its constantly elevated range and its uniformity throughout the year.

Now everybody has felt during even our northern summer the depressing influence of protracted hot weather upon the nervous system, causing languor, lassitude, want of energy, and a disinclination to every kind of exertion, whether bodily or mental.* This depressed condition of the animal powers, especially after it has been contiuued for some time, is probably associated with enfeebled ability on the part of the economy to resist the assaults of morbific agencies. In this way an elevated range of temperature may become a predisposing cause of disease.

* Watson's *Lectures*, p. 65.

But protracted heat not only exerts a depressing influence upon the animal functions; it also exerts a stimulating influence upon the organic functions. Experiments made by Dr. Blagden and others have abundantly shown that the temporary application of great heat to the body increases remarkably the frequency of the contractions of the heart, increases remarkably the rapidity of the circulation of the blood. We find evidence to the same purpose in the annual changes which occur in the vegetable kingdom in our northern latitude; the summer renewing its foliage, the winter checking and repressing it; and still more in the superior luxuriance of vegetation in warm climates as compared with cold.* Still other corroborative testimony is furnished by the phenomena of hybernation. The genial warmth of spring recalls to action those functions of the animal which had been suspended throughout the season of winter, and produces a vigorous reaction of those powers which had been feebly exerted throughout the same period.

Again, heat, whether produced by artificial or by natural processes, whether it be generated by a fire in a close room, or by the summer sun in the open air, promotes the cutaneous perspiration. This fact furnishes another example of the stimulating effect of heat upon the organic functions. Now profuse perspiration, in whatever manner produced, is for the most part a conservative process, by which, according to a beautiful law of chemistry, the uniformity of animal temperature is maintained under varying conditions of external warmth, this uniformity of temperature being an indispensable condition for the existence of all highly organized animals. But at the same time that profuse perspiration answers this useful purpose, nay, is even necessary for the preservation of life under a high degree of external temperature, it debilitates the animal organism by the loss of fluids it occasions, by the changes in the quantity of the circulating fluids it effects. And in this way the sweating process, when continued day and night for weeks and months almost without cessation as it is on the Isthmus of Panama, becomes an important predisposing cause of disease.

But again, an elevated range of temperature stimulates the action of the liver. Experience, even in temperate climates, has shown that protracted hot weather exerts a notable influence

* WATSON'S *Lectures*, p. 64.

upon the function of this organ, increasing the quantity of its secretion and altering its quantity. Thus at the close of summer and in the beginning of autumn we annually witness frequent attacks of vomiting and diarrhœa, produced apparently by the excessive quantity and morbid quality of the bile. In the lower latitudes this morbific effect of heat is still more apparent, producing not unfrequently violent disorder of the stomach and intestines. On the isthmus I often observed that the fecal evacuations of persons in tolerable health consisted mostly of bile, frequently black in color and of the consistence of tar, sometimes bright yellow in color, exceedingly acrid in quality, causing severe burning pain during its passage downward through the intestines. The jaundiced complexion and bilious diathesis, which almost every person brings home after a long residence in tropical climates, should be ascribed, to considerable extent, to the deleterious influence which protracted heat exerts upon the biliary function.

But in what way does an elevated range of atmospheric temperature thus affect the hepatic function? Dr. James Johnson has "distinctly pointed out the sympathy or consent that obtains between the liver and the skin under varying conditions of external warmth." Now this "sympathy or consent" is but the expression of a fact; it in nowise accounts for the fact. The same cause which produces excessive secretion from the skin, produces excessive secretion from the liver. Here the teachings of modern physiology may be brought to our aid. If animal heat is generated mainly by the combustion of carbonaceous matter, yielding as its products carbonic acid and water, which are excreted by the lungs and the skin; if the function of the liver be, to considerable extent, supplemental to that of the lungs, this supplemental office being the excretion of carbonaceous matter not consumed in the process of generating heat, and not deposited in the areolar tissue in the form of fat; if it be true that in hot latitudes the losses of heat from the animal body by radiation and conduction are not so large as in cold latitudes; if, in other words, it does not require so much heat generated by vital chemistry to maintain the temperature of the body at a given point in hot as in cold climates, then it must follow, the quantity of non-nitrogenized food being nearly the same in both cases, that the liver is called upon to eliminate more carbonaceous matter from the blood, to secrete more bile in hot than in cold climates.

Again, in the course of examining Europeans and Americans,

who, after residing for a considerable length of time upon the Isthmus of Panama, have applied to me for treatment, I have often, nay, pretty commonly found hypertrophy of the liver. Other physicians, who have had ample opportunities for observation, have told me that the result of their experience is substantially the same. The degree or amount of the enlargement has varied much in different cases. The effect of the climate of the East Indies in increasing the size of the liver is notorious. Now an elevated range of atmospheric temperature, such as we find upon the isthmus, appears to me to be one of the most probable causes of such hypertrophy. The increased activity of the hepatic function thus produced is accompanied by an increased flow of blood to the organ (congestion,) whereby its size is somewhat increased by mechanical means, and its nutrition is promoted. Moreover, whatever be the explanation, it is a well-known law of the economy, that if the function of an organ be increased, its size is increased also. Witness the kidney, when its fellow has been destroyed by disease, and the burden of secreting all or nearly all of the urine is thrown upon it; the muscles of laboring people, and the muscles of the right arm compared with those of the left. Of a few of these cases of hypertrophy of the liver the cause may have been chronic inflammation, but this explanation is not admissible in most of the cases which I have seen. In fact, owing principally, I suppose, to the singular uniformity of the temperature, I scarcely saw a case of hepatic inflammation upon the Isthmus of Panama. Another and an important cause of enlargement of the liver, which we will examine in another part of this investigation, is malaria and the fevers occasioned by it.*

II.

Of the *noxious exhalations* existing in a state of admixture with the air, or of *marsh miasmata.*

That malaria, or marsh miasmata, is a specific poison, and capable of producing specific effects upon the human system, cannot be denied. It is true we have never been able to detect its presence by even the most delicate chemical tests. It is true we are

* We have discussed, at considerable length, the stimulating effect of heat upon the organic functions. The over-action thus produced will sooner or later be followed by deficient action, or depression, the consequences of which are palpable to every reader, after what has been said.

ignorant of both its chemical composition and sensible properties. We have become convinced of its existence, and we recognise its presence only by the morbid effects which it produces on the animal economy. Substantially the same remarks are applicable to the contagion of small pox, of typhus, and to the pestilential effluvia generated in the wards of large hospitals. And yet does anybody doubt the existence of the last mentioned poisons?

A good deal of attention has been given by observers to the natural history of marsh miasmata, and their laudable exertions have been rewarded with considerable success. It has been satisfactorily determined that a certain degree of temperature (above 60° Fahrenheit) is necessary for its development. It has never, or but seldom, been discovered above the fifty-sixth degree of latitude. In cool climates it usually occasions fever and ague; in warm climates, where it is generated in greater abundance, its poisonous effects are more severe, and it gives rise to remittent fevers; but in tropical climates the most violent effects are produced, for there the conditions necessary for its generation are more nearly perfect. It is there that severe congestive fevers are most frequently met with; it is there that English writers have seen paludal fevers simulate the continued or infectious fevers of northern latitudes.

A certain quantity of moisture is also essential for the development of marsh miasmata. The countries, or portions of a country infested by this poison, are commonly remarkable for their humid or swampy character. Abundant evidence of this fact is furnished in every part of the United States. That this is not an accidental condition is rendered probable by a circumstance which is sometimes observed, viz.: while the marshy plain is almost uninhabitable on account of the prevalence of malarious disorders, the people living on the neighboring hills, where the soil and atmosphere are dry, do not suffer from them. And again, localities formerly noted for malarious disorders, *e. g.*, the city of London, have been almost freed from them by improvements in the drainage.

Besides the presence of a sufficiently exalted temperature, and a sufficient quantity of moisture, still other conditions are necessary for the generation of this poison. "If heat and moisture were alone adequate, we should find malarious fevers prevailing among sailors when out at sea; but it is not so, whatever may be the temperature under which they cruise. It is when they approach

the coast or land upon it that they are attacked."* The only additional conditions which seem to be required are the presence of the soil and the atmosphere. The kinds of soil most congenial to the production of malaria have not been satisfactorily pointed out. The popular idea that it is originated only in marshes or swampy ground is not always true. I have seen malarious fever very prevalent upon dry ground, and at a point quite remote from marshes and swamps. There is another thing worthy of notice while we are considering the origin of these noxious exhalations. They never appear while the swamps are full of water and the earth is saturated with moisture. It is when the soil is drying up that they are poured forth in the greatest profusion.

Now all the conditions required for the development of malaria are amply furnished upon the Atlantic side of the Isthmus of Panama. The thermometer ranges constantly above 69° Fahr. The temperature throughout the year is that of a warm summer. No frosts or snow appear at any season to purify the pestilential air. There are also large tracts of marshy ground. The rail-road from Navy Bay to Gatun passes nearly all the way through a morass. The surface of the country is generally undulating, in some parts it is even hilly, but no high mountain range traverses it, such as we find on the Island of Jamaica.† An abundance of moisture is always present in the atmosphere; it is so humid that books and clothes are speedily destroyed by mould unless much care is taken with them. During eight months of the year more

* WATSON'S *Lectures*, p. 453.

† In this connection the following account of the physical geography of the isthmus by Mr. Lloyd, an engineer, sent by Bolivar, in 1827, to make a survey of that district, may not be uninteresting.

"The northern Cordillera exhibits the first indications of depression in the Nicaragua, but again rears itself for a time in the Province of Veragua, and is there crowned with a very fine plain called La Mesa, (The Table.) In the eastern part of the province it breaks into detached mountains of considerable height, and of the most abrupt and rugged formation; thence proceeding still to the eastward, innumerable sugar-loaf mountains appear, not above three or four hundred feet high, with their bases surrounded by plains and savannahs; and finally, about Chagres on the one side, and Chonesa on the other, these also disappear for a few miles, and the country becomes almost uninterruptedly flat. Presently, however, the sugar-loaf mountains again thicken, and becoming connected, form a small Cordillera, running from about opposite Porto Bello to the Bay of Mandingo, where is the second break. The land then continues low through the Province of Darien and Choco, beyond which point the Cordillera again raises itself on an extended scale and enters South America."—*Vide* ROCKWELL'S *Report*, p. 455.

or less rain falls almost every day. For a considerable part of that time showers occur in the afternoon and evening, by which the ground is moistened, but it is dried up again next morning by the action of the sun. Everywhere in that country we see nature, as the chemist, with her three principal agents, light, heat and moisture, stimulating the development of organic forms, and hastening the processes of decay and dissolution. We are, therefore, not surprised to find that a large portion of the diseases of the isthmus claim a malarious origin. Of the three hundred and eighty-two patients mentioned in the hospital record, two hundred and seventy-three, or considerably more than two-thirds, had miasmatic fevers. The most common types of these disorders are intermittents and remittents, which are readily managed by treatment; but severe remittents and congestive fever are not unfrequently met with.

But these fevers are not the only or the most untoward effects of this subtle poison. It has often been observed, that persons whom necessity has forced to remain in highly malarious districts, after a longer or shorter space of time, become thin in flesh, pale and sallow in complexion, feeble in point of strength, and liable to severe disorders of the stomach and intestines. In the intervals between their periodic attacks of fever, it has been observed that they frequently suffer from diarrhœa and dysentery. Besides these lesions of the mucous membrane, they often acquire important pathological conditions of the spleen and liver. The former organ sometimes reaches an enormous size. I have often felt it through the parietes of the abdomen; and, on a few occasions, have found it so much enlarged, that it extended down to full half the distance between the short ribs and the umbilicus. Now, it has been suggested, that the unnatural concentration of the blood, in the internal parts, which occurs in every paroxysm of fever and ague, when often repeated, affords a rational explanation of this phenomenon. That this is true, in many cases, I do not doubt; but there are also other cases which require a different explanation. For example, I suffered in my own person, upon the Isthmus of Panama, a considerable enlargement of the spleen, an enlargement so considerable, that the organ could be distinctly felt through the integuments of the belly. But in numerous attacks of fever I had only one chill; I had but one of the paroxysms in which the blood is driven away from the external surface of the body, and forced in upon the internal parts

In every other instance my fever commenced with a feeling of languor, lassitude and weariness, with aching in the bones, and particularly in the left leg, with frequent yawning and stretching, but unaccompanied by rigors. Again, I had a patient in the same country, who was suffering from an ague-cake, acquired in the valley of the Magdalena River. In his case the enlargement was so great, that it could be seen externally; and touching it, I made this singular observation. *Immediately preceding* each attack of fever, there occurred a palpable increase of the enlargement of his spleen, which usually subsided with the fever. Indeed, so constantly did this phenomenon appear, that the patient himself used to anticipate attacks of fever by watching this organ. I ought to mention that his fever was always ushered in, while I knew him, either entirely without chills, or with only slight sensations of coldness. Again I noticed upon the isthmus, that in cases of hypertrophy of the spleen, the amount of the enlargement was often entirely disproportionate to the frequency and severity of the paroxysms of intermittents. Now, the explanation of such cases seems to me to be, that marsh miasmata has a direct influence in producing disorders of the spleen, aside from the secondary influence exerted through paroxysms of fever; a direct influence increasing the quantity of blood in the organ, (i. e. producing congestion,) and disturbing the processes of nutrition going on in it. In precisely the same way, I think, we should account for the morbid states of the liver, (including hypertrophy,) which are generally believed to be produced by the operation of malaria upon the system.* With regard to the mechanical effect of paroxysmal fever, in causing enlargements of the spleen and liver, it is probably much greater upon the former than the latter organ, owing to the marked difference in their anatomical structure.

But these diseased states of the liver and spleen are only parts and parcels of a general morbid process, resulting from the long continued application of this deleterious agent to the animal economy. The blood becomes thinner than usual, the quantity of its red disks is diminished, and a state of aræmia supervenes. In com-

* It should be recollected, that congestion of the whole portal system generally accompanies the congestions of the liver and spleen just mentioned. We can also readily see that important morbid consequences must follow the stagnation of the blood, accompanying these congestions, especially when they are of long duration. These facts should constantly be borne in mind when we attempt to explain the phenomena of many cases of malarious disorder.

mon with the nutrition of the blood, the nutritive processes throughout the body are impaired or perverted, and the sufferer becomes not only pale, but emaciated also. The mucous membranes acquire what may be denominated an irritable condition, and are, in consequence, exceedingly liable to higher grades of diseased action. There is a notion among laymen on the isthmus, that the fevers are apt to degenerate into dysentery; and it seems to be true, that after repeated attacks of fever, persons are more subject to diseases of the bowels. But while these changes are taking place in the physical organism, corresponding changes are occurring in the mental phenomena. The spirits and intellect of the sufferer become low and feeble, partaking of the decay of his physical powers. He loses all taste for intellectual pursuits, and even if that remains, he has lost the ability to gratify it. Such are the effects of marsh miasmata upon many persons who attempt to reside upon the Atlantic side of the Isthmus of Panama.

That there is any poison, other than malaria, habitually diffused through the atmosphere of a considerable district of that country, we have no proof. I did not meet with a single case of typhus or any allied disorder. The only disease that came under my observation, which might have been confounded with typhus, was climate or remittent fever, in the typhoid stage. But in most cases, the deferential diagnosis was easily made, by examining carefully the symptoms accompanying its accession, and marking its progress. It occurred principally in persons enfeebled by intemperance and previous attacks of fever, or those who had injudiciously taken irritating purgatives. The most important lesion complicated with the paludal fever in such cases, seemed to be a low grade of inflammation in the mucous membrane of the small intestine. The correctness of this view of its pathology is rendered probable by the entire absence, in the first stage, of the nervous symptoms peculiar to typhus; by the tenderness under pressure, in the regions of the small intestines; by the presence of diarrhœa and tympanitis, and by the beneficial effect of remedies proper for the care of such a lesion. I regret exceedingly that I was unable to make dissections in some cases where death had taken place by this disease, for they would have assisted materially in determining its pathology.

III.

Of the hygrometric state of the atmosphere as a cause of disease.— We have already had occasion to notice the excessive humidity of

the air upon the northern side of the Isthmus of Panama. We have only mentioned the fact in general terms. We are still in want of those accurate hygrometric observations which would enable us to trace the varying conditions of health under the varying conditions of atmospheric moisture. But no careful observer, who has lived at Navy Bay, Chagres, Porto Bello, or in the valley of the Chagres river, will deny the correctness of the general statement. This excessive humidity is occasioned by the warmth of the climate, the proximity of the sea, the numerous streams of water traversing the country, the presence of much low and marshy ground, and the fall of a greater or less quantity of rain during two-thirds of the year.

Let us now consider the effect of this state of the atmosphere upon human health. Dr. Chomel makes the following remarks:* "Affections of the mucous membrane and those called adynamic, prevail under the influence of a *warm* and *moist* air; catarrh, scurvy and rheumatism occur more particularly when the atmosphere has for a long time been moist and cold." "In our climate," (Paris,) he continues, "the southwest wind is of a warm and moist temperature; the northwest wind is cold and moist. The influence of these winds in the production of diseases is the same as that of the different qualities to which they correspond;" and thus it seems that the popular idea of the unhealthiness of the warm, moist weather, which we sometimes have in this climate in the spring and autumn, is not altogether erroneous. Many of us have noticed how dull and languid we feel when the atmosphere has suddenly changed from a *warm* and *dry* to a *warm* and *moist* state.

Now in the course of making observations upon large bodies of men in the valley of the Rio Chagres, I remarked a prevalence of the disorders of the mucous membranes, a prevalence of catarrhs, diarrhœa and dysentery, for which I could not satisfactorily account on the supposition that they had been occasioned by temperature and malaria alone. Neither did it appear to me that in all cases they had been produced by the peculiar quality of the water and the food. I was therefore led to seek for another morbific cause, which seemed to be the humid state of the atmosphere; and this opinion is materially strengthened by the high authority just quoted. But this is not the only, or even the most important

* CHOMEL'S *General Pathology*, p. 32.

cause of mucous disorders in tropical climates; for the morbid effects of heat and marsh miasmata have been too clearly pointed out by many observers.

Again, after aiding materially in the generation of malaria, moisture seems to possess the power of absorbing it. This statement is rendered probable by the well-ascertained fact, that a current of air loaded with this poison is freed from it "by passing over even a small surface of water."* By this capacity of water to absorb malaria, the minute globules suspended in the atmosphere in the form of vapor, may become saturated with it, and thus moisture may powerfully assist both in applying the deleterious agent in a more concentrated state to the external surface of the body, and in introducing it in the same state within the cavity of the lungs. It is in this manner that we may explain the proverbially noxious effects of foggy weather and night air in all malarious districts, for at such times the humidity of the atmosphere is sensibly increased. Thus the globules of moisture in the air may become bearers of malaria, as the red disks of the blood are carriers of oxygen, and thus the hygrometric state of the atmosphere may indirectly exert a powerful influence upon human health. Atmospheric moisture also renders the animal body much more sensible of the variations of external temperature; but this fact is so well stated by all writers on general pathology, and is of such secondary importance as a cause of disease on the isthmus, that it does not claim an extended notice at our hands.

With regard to the influence which the electrical conditions of the atmosphere exert in the production of disease, I regret that I have nothing to offer. Careful observers, both in this country and Europe, are convinced that electricity is an agent too powerful and too widely diffused, to be entirely destitute of influence upon human health. But the ideas on this subject are still too vague and unsettled for any useful application to our present purpose.

Diet, also, exerts an influence upon the health of many foreigners residing on the isthmus, which is too important to be entirely overlooked. Persons who come from the cold climates, where, on account of the lowness of the temperature, larger quantities of certain kinds of food are required to supply the natural waste of the system, through the force of habit are apt to consume larger

* Watson's *Lectures*, p. 463.

quantities of food than their new thermometrical relations demand. For a time the digestive apparatus possesses sufficient tone to effect its assimilation, but during the same period, the functions of the excreting organs are unnecessarily taxed to provide for its removal from the body. Afterwards the stomach becomes weakened, and if through the force of habit or the stimulation of the appetite by cordiments and alcoholic drinks, unnecessary quantities of food continue to be taken, a considerable portion of it may remain undigested in the alimentary canal, undergo the putrefactive process, and thus become a morbific agent. Again, people from the northern countries are disposed, through the same force of habit, to continue the use of qualities or kinds of food, (e. g. fatty substances,) equally unsuited to the new circumstances by which they are surrounded, and they will sooner or later experience the injurious consequences of so doing.

The water used to quench thirst or for culinary purposes, seems to perform only a subqrdinate part in the production of disease on the isthmus, except in certain localities. Perhaps, through its known affinity for malaria, which has already been mentioned, it may everywhere in that country, serve as a means of introducing the marsh poison into the economy through the stomach. But in particular localities, it is highly charged with decomposing vegetable matter, such as we find in swamps and streams nearly dried up, and seems to be productive of diarrhœa and dysentery. It is a very fortunate circumstance that water, nearly free from these impurities, can readily be obtained at most places on the isthmus.

It is scarcely necessary to mention that the observations upon which this paper is founded, were principally made at Navy Bay, Chagres, Gatun and Buyo Soldado, among laborers upon the rail-road, foreign residents and natives. At each of the places just mentioned, I saw a few persons born in the United States and Europe, who, after having remained in the country for a considerable length of time, had suffered very little from sickness. But these persons were the exceptions to the general rule, and only served to illustrate how widely the capacity of resisting the effects of morbific agents varies in different individuals.

According to all reports, Porto Bello is by far the most unhealthy town upon the Isthmus of Panama. It is said to have become almost depopulated on this account. The principal local cause for such excessive sickliness, is the presence of a precipitous mountain, by which the place is in a measure walled in. By it

the free range of the wind is prevented, stagnation of the air is produced, and the atmospheric temperature and humidity are increased.

We have thus endeavored to give a general account of the diseases of Europeans and Americans on the northern side of the isthmus, and we have discussed their etiology at considerable length. In a future article we propose to take up these disorders individually, and describe their symptoms, progress and treatment.

ART. VII.—*Reduction of a Dislocated Femur, without Pulleys.* By J. M. LITTEN, M. D.

[Communicated in a Letter to the Editor.]

MR. EDITOR: I see in the Sept. No. of the *New-York Journal of Medicine* three cases of this accident detailed by Dr. Reid; also, in the Nov. No. of the same Journal, one case by Dr. Barnard, in all of which the reduction was effected without the usual apparatus, and in the manner recommended by Dr. Reid.

The appearance of the above cases induces me to place at your disposal the notes of a case that occurred in my practice before I saw Dr. Reid's paper.

Austin, Texas, Feb. 14th, 1851. I was called to see a daughter of Mr. C., of this city, aged 4 years. I found the head of the right femur resting upon the dorsum ilii. The reduction was effected as follows: The patient being placed upon a lounge, the trunk of the body was steadied by an assistant, while I placed my foot upon the perineum of the child. Grasping the limb above the knee with my right hand, and at the ancle with my left, I operated by carrying the limb in a flexed position inward and upward, making extension with the right hand, and a slightly rotatory movement with my left, when, in a few seconds, I felt the head of the femur glide gently over the rim of the acetabulum, and resume its natural situation in the socket. No bandages were used, and the recovery was both speedy and perfect.

Austin, Texas, Dec. 27th, 1851.

PART SECOND.

CRITICAL BIBLIOGRAPHICAL NOTICES.

ART. VIII.—A *System of Operative Surgery, based upon the Practice of Surgeons in the United States, and comprising a Bibliographical Index and Historical Record of many of their Operations during a period of two hundred years.* By HENRY H. SMITH, M. D., Surgeon to St. Joseph's Hospital, Assistant Lecturer on Demonstrative Surgery in the University of Pennsylvania, etc., etc. Illustrated by numerous steel engravings. Philadelphia: Lippencott, Grambo & Co. 1852. Parts 1, 2. 8vo., pp. 220.

THIS belongs to a class of works much needed in our medical literature. He who has been engaged to any great extent in investigating the contents of American medical periodicals must have had forced home to his mind, early, the conviction that there exists in this department of our literature a vast amount of facts, which, if well arranged, would afford material possessing great practical value for the preparation of works of merit in all departments of our art. For the last half century the pen of American physicians and surgeons has been principally engaged in recording in our medical periodicals the rich and varied results of their extended experience. So much so has this been the case, that most of our eminent practitioners, departed and living, are only known in the literature of medicine by their contributions to medical journals. In the accumulated facts of half a century, then, may be found the elements which, if properly arranged, would serve in preparing works alike honorable to our science and literature. It is these considerations which lead us to hail this work as a forerunner of a harvest in every department of medicine, which ere long will be garnered by laborers, some of whom are already actively engaged in the field.

The volume before us opens with a "*History of Surgery,*"

which is in the main well written, and will interest, while it at the same time instructs, the young reader. The American portion of this history will particularly attract the attention of the student, as it is the most elaborate summary of its kind which has ever fallen under our notice. Following this is a "*biographical index of American writers on subjects connected with operative surgery, from the year* 1783 *to* 1850, *inclusive.*" This biographical index contains a list of the principal leading writings during the period specified, embracing native books, reprints, journals, and the various papers therein contained; and following this next in order comes the operative portion of the work. Part 1st, "*General and Elementary Operations;*" and Part 2d, "*Operations on the Head and Neck.*"

The work comprises all the principal operations of American surgeons, and is illustrated with numerous plates on steel, many of which are original, the greater portion, however, being excellent copies of the celebrated work of Messrs. Bernard & Huette. The copy which we have, however, lacks the distinctness of the original French work, owing to the absence of color, we presume.

The design of this volume is unique—the execution evinces a good degree of talent, and a perseverance and industry truly commendable. We look upon this effort of Dr. Smith as deserving of praise, and should the other portions of the work be finished with the same discrimination as this has been, it cannot fail to receive the general approbation of the press, and be favorably received by the whole profession. The typographical and artistical execution is all that the most fastidious could desire. The work will be issued in five parts, the remaining three of which "will" (we learn from the advertisement) "succeed each other as rapidly as is consistent with the proper execution of the plates." We shall, therefore, recur to the work again on a future occasion.

ART. IX.—*A Treatise on the Diseases of the Chest: being a Course of Lectures delivered at the New-York Hospital.* By JOHN A. SWETT, M. D., Physician to the New-York Hospital, Member of the New-York Pathological Society. New-York: D. Appleton & Co. 1852. 8vo., pp. 585.

THE comparative dearth of native treatises on the specialities of medical science has often been the subject of remark. The value

of practical, well written and digested monographs is acknowledged by all. Such works have claims, self-evident, upon the minds of the practitioner as well as the student. The lectures which make up this volume were published a number of years since in the "*New-York Lancet.*" For the present occasion we perceive they have been subjected to a careful revision, and are now offered to us containing the results of the author's experience in private and public practice for the last ten years. In looking over the work (for we have as yet had time only to give it a hasty examination) we find that the author relies mainly upon his own experience and its results, drawing but sparingly upon the writings of others. This feature of the work we feel assured will, in the minds of a large portion of our readers, greatly enhance its value.

The volume contains thirty-five lectures, twenty-two of which are occupied with the "*diseases of the lungs,*" and the remaining thirteen with the "*diseases of the heart.*" It also contains an appendix, illustrated with two plates on steel, comprising a translation from M. Lebert's work on "*Pathological Physiology*" of the microscopic discoveries in the structure of tubercle and cancer. The type and paper of the work is *good.* We bespeak for it a liberal and praiseworthy reception.

Art. X.—*The Transactions of the American Medical Association.* Instituted 1847. Vol. 4. Philadelphia: Printed for the Association, by F. K. & P. G. Collins. 1851. 8vo. pp. 677.

The American Medical Association was instituted for the purpose of promoting the best interests of the profession, and in this volume we have evinced increasing evidence of its prosperity and usefulness in this respect. The several reports of this are prepared with more care than those of the preceding volumes, and the appendixes to the reports are, many of them, exceedingly valuable; while the prize essay, "*On the Corpus Leuteum of Menstruation and Pregnancy,*" by Dr. J. C. Dalton, is a highly creditable contribution to Physiology, and the plates, which illustrate it, are executed in a manner which does credit to American art. Our space on the present occasion will not permit us to enter into an analysis of the practical matter of this volume. We commend it to the attention of our readers, with the full assurance that it is in an eminent degree worthy of a place on the library table of every working member of the profession.

PART THIRD.

FOREIGN MEDICAL RETROSPECT.

PATHOLOGY AND PRACTICAL MEDICINE.

On some of the Histological Characteristics of Malignant Growths. By Prof. ALBERS, of Bonn.

1. No form of growth other than the malignant consists so exclusively, even to the acquisition of a large size, in cell-formation, all non-malignant ones containing a great abundance of fibre-formations. It may be objected that *epithelial* tumors consist of cells, and yet remain innocent. It is to be observed, however, that such tumors always remain small, and have not proved so generally innocent as the polypus and fibroid. Epithelial tumor, too, frequently relapses, and is sometimes as destructive as cancer itself. Among other innocent tumors, the *fatty* especially exhibit cells, but the regular fibrous network, which is also present, essentially distinguishes them from all malignant tumors.

2. In innocent growths the cells decrease with the duration of these, while in malignant ones they increase. At the commencement of the so-called tumors of the cellular tissue, among the predominant fibres, cells are to be seen, which at an older date are entirely absent; and the same is observed in polypus and fibroid. In malignant tumors a great number of fibres are found at first; but the longer the tumors exist and the larger they become, the more completely do such fibres disappear, leaving the cells as the sole histological element.

3. Certain peculiarities are observed in these cell-formations, among which may be mentioned the incomplete formation of the greater part of the cells, when the tumor is old and large, and especially in the case of relapsing and secondary formations. The cells exhibit either a different form, an unequal size, or an irregular degree of development. The equal development of the structural elements of polypus, fibroid or fatty tumor, furnishes an entirely different general impression from that derived from any kind of malignant tumor.

4. Besides the incompleteness and irregularity of the development of cells in malignant growths, they are found in these to undergo a rapid disintegration, examples of which, though

more frequently met with in the older tumors, are not wanting in the younger ones, showing the retrograde changes which are taking place. The elements proving this, are granules, granular bodies, and granular cells; and these are to be found in a greater or less number in every cancerous tumor proportionate to its age. If, on the other hand, we consider the regular and unchanged condition of the cells in fatty tumors or polypus, in which scarcely any granular bodies or cells are found, it becomes certain that the duration of the life of a cell is much longer in innocent than in malignant tumors.

5. Malignant tumors are remarkable for the rapidity of their cell growth. In a few days an entire lung may undergo tubercular transformation, or a cancerous tumor acquire double its size. A relapse may occur in five or six days, and a few days later may attain enormous dimensions. No innocent tumor comports itself thus.

6. In malignant swellings we always find a more abundant juice, which flows out on pressure, and contains some of the elements of the disease, as the cells, and the same fluid blastema is obtainable from tubercular lungs. When fluid is pressed out from a polypus, it contains no cells or fibres, or very few, while in that obtained from cancer there are numerous cells in every stage of development. It follows from this, that the textural connection in the malignant tumor is always looser, and the proportion of fluid blastema always larger, than in the innocent; and that these slightly connected elements are easily separable, and are incapable of the degree of development observed in the innocent, being, therefore, endowed with a shorter duration of life than these.

It results from the above observations, that there is less *vital energy and durability* in malignant growths, as is shown by the fewer stages of development they are capable of; and by the great disposition of the cells to terminate their life, and to pass into granular bodies and granule-cells. This retrograde course explains the inordinate increase of cells, just as we see an immense reproductive power in animals placed low down in the scale. The lower its vital energy sinks, the more rapidly does the growth increase, so that the second or third relapse takes on a much larger and more rapid development than did the original tumor—a point well deserving the attention of the operator, lest, by his interference, he lowers the amount of vital energy, and hastens death more rapidly than it would have occurred had the case been left to nature. It is to this diminution of vital activity, that the peculiar softening of these tumors is due. In the softened mass are found the elements of the degenerated structure with incompletely formed pus globules; and when the vital power is increased, and, as in tubercule, stationary condition of the disease produced, a more complete pus formation takes place.—***Brit. and For. Rev., from Canstatt's Jahrb.***, 1850, v. 248.

Practical Propositions respecting the Diagnosis of Phthisis. By Prof. W. H. Walshe, of London.

(*a.*) A young adult who has had an obstinate cough, which commenced without coryza, and without any obvious cause, a cough at first dry, and subsequently attended for a time with watery or mucilaginous looking expectoration, and who has wandering pains about the chest, and loses flesh, even slightly, is, in all probability, phthisical. (*b.*) If there be hæmoptysis, to the amount of a drachm even, the diagnosis becomes, if the patient be a male, and positively free from aneurism or mitral disease, almost positive. (*c.*) If, in addition, there be slight dullness under percussion at one apex, with jerking, or divided and harsh respiration, while the resonance at the sternal notch is natural, the diagnosis of the first stage of phthisis becomes next to absolutely certain. (*d.*) But not absolutely certain; for I have known every one of the conditions in *a*, *b*, and *c*, exist (except hæmoptysis, the deficiency of which was purely accidental,) when one apex was infiltrated with encephaloid cancer, and no cancer had been discovered elsewhere to suggest to the physician its presence in the lung. (*e.*) If there be cough such as described, and permanent weakness and hoarseness of the voice, the chances are very strong (provided he be non-syphiltic) that the patient is phthisical. (*f.*) If decidedly harsh respiration exist at the left apex, or at the right apex behind; if the rhythm of the act be such as I have called *cogged-wheel*, and there be dullness, so slight, even, as to require the dynamic test for its discovery, there can be little doubt of the existence of phthisis. (*g.*) If, with the same combination of circumstances, deep inspiration evokes a few clicks of dry, crackling ronchus, the diagnosis of phthisis, so far as I have observed, is absolutely certain. (*h.*) If these clicks, on subsequent examination, grow more liquid, the transition from the first to the second stage may be positively announced. (*i.*) If there be slight flattening under one clavicle, with deficiency of expansion-movement, harsh respiration, and slight dullness under percussion, without the local or general symptoms of phthisis, the first stage of tuberculisation cannot be diagnosed with any surety, unless there be incipient signs at the left apex also; the conditions in question, limited to one side, might depend on chronic pneumonia or on thick induration matter in the pleura. (*k.*) The existence of limited though marked dullness under one clavicle, with bronchial respiration and pectoriloquy, so powerful as to be painful to the ear, the other apex giving natural results, will not justify the diagnosis of phthisis. I have known this combination when the apex of the lung was of model health, and a fibrous mass, the size of a walnut, lay between the two laminæ of the pleura. I would even go farther and say, that the combination in question is rather hostile than otherwise to the admission of phthisis, as, had tuberculous excavation formed at one side, the other lung would, in infinite probability, have been affected in an

earlier stage. (*l.*) Pneumonia limited to the supra and infra-clavicular region on one side, and not extending backwards, is commonly, but not always, tuberculous. (*m.*) Subcrepitant ronchus, limited to one base posteriorly, is not, as has been said, peculiar to tubercle; it may exist in emphysema, and in mitral disease. (*n.*) Chronic peritonitis, in a person aged more than fifteen years, provided cancer can be excluded, involves, as a necessity, the existence of tubercles in the lungs. To this law of Louis' it is necessary to add the qualification, provided Bright's disease be also absent. (*o.*) Pleurisy with effusions, which runs a chronic course in spite of ordinary treatment, is, in the majority of cases, tuberculous or cancerous: the character of the symptoms, previously to the pleurisy, will generally decide between the two. (*p.*) Double pleurisy, with effusion, is not, as has been said, significant of tubercle; for it may depend on Bright's disease. If the latter disease can be excluded, carcinoma and pyohæmia remain as other possible causes. (*q.*) If a young adult, free from secondary syphilis and spermatorrhœa, and not dissolute in his habits, speedily lose flesh without clear cause, he is, in all probability, phthisical, even though no subjective chest-symptoms exist. (*s.*) But he is not by any means certainly so, for he may have latent cancer in some unimportant organs, or he may have chronic pneumonia. (*t.*) Nay, more, he may steadily lose weight, have dry cough, occasional diarrhœa, and night sweats, and present dullness under percussion, and bronchial respiration under both clavicles, and yet be non-phthisical. I have known all this occur in cases, both when the lungs were infiltrated superiorly with primary encephaloid cancer, and when they contained secondary nodules of the same kind. (*u.*) Failure of weight becomes less valuable as a sign of phthisis, the longer the thirtieth year has been passed. (*v.*) The discovery of cardiac disease with marked symptoms, deposes against, but does not exclude, the existence of active tuberculisation. (*w.*) The existence of cancer in any organ is unfavorable to the presence of tuberculous disease, but tubercle and cancer *may* coexist, even in the same lung.—*Diseases of the Lungs and Heart.*

SURGERY AND SURGICAL PATHOLOGY.

On a Novel Method of Treating Diseased Joints. By Mr. Gay.

[The following synopsis of a paper read before the Medical Society of London, Nov. 15th, 1851, bears so close an analogy on a mode of treatment set forth in previous numbers of this Journal, that we are constrained to copy it entire, as we find it in a late number of the *London Medical Gazette.—Ed. N. Y. Jour. Med.*]

Mr. Gay commenced his paper by observing, that to the present time there was no department of surgery in which the powers of art have been comparatively so feeble as when applied to the relief of those diseases of the joints, which, from their results, might be termed destructive. Hence, let the articular surfaces of the joint be bereft of their cartilages, a sinus or two be formed

around it, and the health of the patient show symptoms of exhaustion, and the joint, and probably the whole limb, is doomed to amputation. He adverted to the causes of the removal of the cartilage from joints, and gave it as his opinion, that in addition to primary synovial and osseous disease, the cartilages were sometimes removed by absorption, in consequence of degeneration of their own tissue, without any traceable affection of the contiguous textures. In all cases of removal of cartilage the tissue degenerates into a kind of fibrous texture, antecedent to the final process; and as portions of cartilage were sometimes observed to be removed without any apparent disorder of either the synovial or osseous surfaces, and, moreover, as cartilage was known to be inadequate to its own repair, Mr. Gay thinks it most propable that the portions of cartilage so removed had first spontaneously degenerated, and then become absorbed. Mr. Gay went on to remark, that if a series of joints be examined in which the removal of the cartilages is taking place, the appearances will be as follows:—If it be presumed to follow disease of the synovial capsule, the cartilage will be found in some to maintain its connection with the bone, whilst it is thinned by absorption at its free surface. In others, however, the bone is found inflamed at various points of its connection with the cartilage; and at these points the cartilage is loose, and may be peeled off, so that portions of thin attached and unattached cartilages are found in the same joint. When entirely denuded, or almost so, the surfaces of the bones may exhibit simply a state of increased vascularity, which precedes the effusion of plastic lymph for the purposes of reparation by anchylosis, or may be observed to be in a condition of ulceration. This ulceration may exist as a simple abrasion, or be of considerable depth; but there is generally a uniformity in this respect over the whole surface. With this state of ulceration there is also a softening of the osseous structure, and frequently disintegration; the contents of the joint consisting of broken up cartilage, and osseous and other debris together, or osseous matter, with ichorous or sanious discharge. When the disease originates in the bone, as in by far the greater number of cases, in Mr. Gay's opinion, it does, the separation of the cartilage is effected by another process, which he terms "shedding," and the cartilage is then reduced to the condition of a foreign body within the joint. Shreds of cartilage thus situated in a joint may be observed after months and even years of disease; and as, on the other hand, its separation from the articular extremity of the bones may be accomplished in an almost incredibly short period of time, it is fair to infer that the time thus passed must have been occupied in the process of its extrusion from the joint, and that this is accomplished, neither by ulceration nor absorption, but disintegration by, and solution in, the discharges of the joint. But the bone itself being diseased, adds its exfoliated or disintegrated particles to the cartilaginous debris, which, with its own discharges, constitute generally the contents of a joint in which the disease com-

menced in its bony elements. The result of these discharges is to set up inflammation in the sound textures contiguous to the joint, and general systemic irritation. Sinuses form around the joint; the disease extends itself; the ligaments become ulcerated; the spongy tissue of the bones infiltrated with pus, and broken down; osteophytes form around the heads of the bones; abscesses extend themselves into the surrounding soft parts, separating the different structures, and setting up unhealthy and destructive action amongst them; and, in short, a climax is arrived at in which the local mischief reacts upon the constitution, and life is only to be preserved at the sacrifice of the joint or of the limb. Mr. Gay inferred from these remarks, of which only an imperfect abstract has been given—

1. That there appears to be no reason why disease effecting the constituents of a joint should be slower in their course of reparation than diseases of any other part or structure.

2. That the removal of cartilage from its osseous connection in a joint is occasionally effected by absorption, but most frequently by a process of "shedding," or exfoliation.

3. That cartilages thus shed become, by their being pent up in a joint, sources of local and constitutional irritation, and thus promote disease in the osseous and other structures appertaining to a joint, supposing that such affections do not exist primarily; and in case they do, these cartilages, by the same influence, maintain and extend these diseases also.

4. That the natural outlets for these discharges, the sinuses, are inadequate for that purpose.

5. That therefore the exfoliated contents of a diseased joint have to be minutely broken up by, or dissolved in, the discharges of the joint, in order to their removal; processes which are necessarily of a very protracted order, and which account for the tardiness in general characteristic of joint diseases.

6. That the exfoliated contents of a joint, after its cartilages have been removed, and even after extensive diseases has been set up in the bones and other textures, have only to be completely removed, and processes of reparation will, in the majority of instances, immediately commence.

Mr. Gay then alluded to the usual modes of treatment, and remarked, that the operation of resection of a joint is not only a useless but an unphilosophical mode of treatment for diseased joints. In the first place, primary disease is generally limited to one of the articular extremities of the joint; it is therefore a useless mutilation to remove more than that disease, supposing the operation were for a moment admissible. But, moreover, dissections show that disease originating in bone, when arrived at that stage at which the operation of resection is generally employed, has extended itself far beneath the surface, and frequently along the shaft for a third of its whole length, so that resection cannot accomplish its purpose, which must be manifestly the removal of all disease. The plan Mr. Gay recommends, then, is

free and deep incisions made along each side of a joint, so as to lay open its cavity freely, and to allow of no discharges being by any possibility retained within its cavity. They should be made of such a length, and so treated, that they do not heal into the form of sinuses. They should be made, if possible, one on either side of the joint, and in the direction of the long axis of the limb. They should extend into the abscesses in the soft parts so as to lay them open. If sinuses exist, the incisions should be carried through them, if this can be done without departing from a slight curve. If either of the bones be carious or necrosed, the incisions should be carried deeply into such bones, so as to allow the dead particles of bone to escape. Ligaments which stand in the way of a free discharge from the joint should be cut through. Of course important vessels should be avoided. The wounds should be kept open by pledgets of lint, and free suppuration encouraged. The constitutional powers have in each case rallied immediately after the operation; and as the discharges from the joint have altered in character and become healthy, which they in general do in the course of two or three weeks, these become invigorated, and improve with the improving joint. Mr. Gay then narrated some cases in corroboration of his views: Peter D——, aged thirty-eight, admitted into the Royal Free Hospital in 1842 for diseased elbow joint of three years' standing, with ulceration of the cartilages and sinuses. The joint was opened on either side, and healed in eleven weeks. The next was a case of disease in the articulation between the first and second phalanges of the thumb of eighteen months' standing. Cured in six weeks. The third case was that of a man with "long-standing" disease of the tarsal articulation. One sinus led to the interior of the joint. Incisions were made on each side of the foot, and complete anchylosis followed. The fourth case was that of a little boy with strumous constitution, with disease of the knee-joint consequent upon suppuration of the bursa behind that joint. The little fellow was reduced by fever to a very low ebb, so that bed-sores formed on parts of his body. The joint was opened; anchylosis took place at the end of four months, and the knee bent on the thigh. The fifth case was that of a German, with disease of the wrist joint, which had resisted treatment. One sinus led into it. One incision was made at the back of the joint, and anchylosis followed, but was not observed to be perfect for six months. The sixth case was that of a young Irishwoman, with disease of the tarsal articulation, following upon traumatic erysipelas of the leg and foot. She was reduced to an exceedingly low condition, and from cough with bloody sputa, night sweats, (according to Dr. Heale,) the physical symptoms of the chest, and extreme emaciation, she was supposed to be phthisical, and so diseased, that amputation, which was supposed to be the only remedy for the disease, so far as the joint was concerned, was forbidden by the authority of Dr. Heale. Mr. Gay made an incision on either side of the foot in this case, and the change both in the joint and con-

stitution was remarkable. Her health rallied from that moment, and the joint assumed a more healthy aspect. In a fortnight the joint was fixed by the exudation of lymph between the bony surfaces, and in five weeks perfect anchylosis had taken place, and the wounds had healed. She soon after left the hospital, and was, a week or two since, to Mr. Gay's knowledge, in perfect health. The seventh case was that of Highley, a report of which has been published. The eighth case was that of a little boy with disease of the articulation of the first and second phalanges of the thumb. In this case the cure was not accomplished. The incisions resolved themselves into sinuses, and after several months the necrosed phalanx came away."

Easy mode of Reducing a Dislocated Femur. By Dr. Mayr.—Dr. Fischer, of Cologne, published in *Casper's Wochenschrift*, November 1, 1849, an account of his mode of reducing dislocation of the femur, and which consists in flexing the femur to an acute angle with the trunk, and impressing upon it gentle rotatory movement while in a state of adduction if dislocated on to the pubes, and of abduction if dislocated on to the ilium. Dr. Mayr, without being then aware of this procedure of Dr. Fischer, resorted to it in a case that occurred lately to himself. A man, aged 31, dislocated his right femur upwards and backwards; and after repeated attempts at reduction, even by the pulleys, had been made, the author was called in on the 13th day after the accident. After he had in vain tried the ordinary plan of extension and counter-extension, he resorted to the following means. The opposite limb and the pelvis were fixed, the operator flexed the femur upon the trunk, and, passing one arm under the ham while he grasped the calf with the other, he imparted rotatory movements of gradually increased strength to the limb. As soon as he perceived a greater mobility of the head of the femur, he brought the limb into a state of strong abduction; and when, still continuing the rotation, the head had approached the acetabulum, he was able, by a rapid and strong pull inwards, to slide it into its pan, which it entered with a loud noise. The gentle rotatory movements mentioned by Fischer did not succeed here, all his force being required in their production, which may be probably due to the time the bone had remained unreduced.

The anatomical structure of the parts also recommends this procedure. In front of the thick edge of the acetabulum, the under surface of the ilium forms a perceptible depression, and if the directions given in the manuals are followed, of making the traction obliquely from outwards inwards, and somewhat from behind forwards, be followed, the head of the bone must meet in this depression with a considerable obstacle to its progress. This sometimes even invincible obstacle appears to be avoidable by resorting to abduction.

Aneurism treated by Compression, with Remarks on the Post-Mortem Appearances presented in a Subject in whom two Popliteal Aneurisms had been so treated four years previously; and a Table of the Cases in which Compression has been successfully employed since 1842. By C. B. BELLINGHAM, M. D, Surgeon to St. Vincent's Hospital.

[The following observations on a case of aneurism we copy from the *Dublin Medical Press* for Dec. 3d, 1851. They were read before the Surgical Society of Ireland on the 22d of Nov. last, and are worthy of a careful perusal. ED. *N. Y. Jour. Med.*]

These pathological specimens illustrate in the one limb the mode in which compression effects the cure of aneurism, and in the other, the subsequent changes which ensue by which the recurrence of aneurism at the same part of the artery is effectually prevented.

This patient lived above four years after the treatment of the two aneurisms in opposite limbs; upon the side that the aneurism had been cured, and where, after the cure, a solid hard tumor, of the size and shape of a racket-ball, marked the site of the aneurismal sac, we now find no remains of an aneurismal sac, the sac and the artery at the part are consolidated into one, and merely a solid rounded ligamentous cord marks the site of the aneurism and of the part of the obliterated popliteal artery from which it sprung.

In the opposite limb where the compression was kept up for a much shorter period, and where the aneurism did not cease to pulsate, we find the aneurismal sac greatly diminished in size, its walls very thick, its interior nearly filled by fibrine, and the artery at the part not obliterated, but permitting a current of blood still to pass through it.

On previous occasions, I have had the opportunity of exhibiting to the members of the Society preparations illustrating the results of compression for the cure of aneurism from subjects who died of other diseases, either subsequent to the cure of the aneurism or before the pulsation had ceased. The present differs from any hitherto recorded, and is, perhaps, more important, as it bears upon a point which we had not the opportunity of determining heretofore, while it tends, as much as any single case can, to confirm all that has been said of the advantages of this method of treating aneurism.

In the details of this case, I have said that, after compression had been employed for a time upon the right lower extremity, it was discontinued before the pulsation of the aneurism had ceased, in consequence of the patient being obliged to return to his employment. Notwithstanding that the pulsation continued, the tumor not only did not increase subsequently, but actually diminished in size, although the patient had to work at a very laborious employment, in which he was obliged to lift and carry heavy weights; and during upwards of four years that intervened be-

tween the period at which the pressure was discontinued and the patient's death, it never caused the slightest inconvenience, and he continued to work until the enlargement of the thoracic aneurism compelled him to desist.

The post-mortem examination shows why this was so; we find the aneurismal sac contracted and diminished in size, its parietes much thickened, and its cavity in great part filled up by fibrine deposited in concentric layers. A small portion of its interior still permitted the entrance of the blood which passed down the popliteal artery, the pulsation of which communicated to the sac gave the impulse which was felt at the part during the patient's life.

It is a point of some interest to determine whether an external aneurism can be considered to be cured, although the channel of the artery at the seat of the disease is not obliterated, and a current of blood continues to pass through the vessel. We know that when aneurism of the arch of the aorta undergoes a spontaneous cure, the sac alone is filled up, while the artery for an obvious reason continues pervious afterwards. Now, the examination of this preparation, combined with the history of the case, afford evidence that popliteal aneurism may be so far cured that the sac can scarcely enlarge again, although there is no obliteration of the artery at the seat of the disease, and likewise that this desirable result may be brought about by making compression upon the artery on the cardiac side of the sac.

The cause of the enlargement of an aneurismal sac in any situation is evidently the distension from within, caused by the impulse communicated to the blood by the systole of the left ventricle. If this distension can be diminished, or prevented altogether, the aneurismal sac cannot enlarge, but it will, on the other hand, rather diminish in size. Now, by making pressure upon the artery leading to an aneurismal sac, we can take off this distension, and render the sac quite flaccid, and by continuing the compression we can maintain the sac in this state for an indefinite length of time. Moreover, when the current of blood through the sac is materially diminished in force, velocity and volume, another agent almost always comes into operation, the fibrine of the blood in its passage through the sac is deposited upon its interior, by which the parietes of the sac are still further strengthened.

It would appear, indeed, from the results of one or two cases, where the disease was of very recent origin, that when compression upon the artery above is steadily maintained, the aneurismal sac may gradually shrink until reduced to a very small size; and if the precaution is taken of not allowing a full current of blood to pass down the artery for a certain period, the remains of the shrunken aneurismal sac ultimately are scarcely to be felt, particularly if its site was the popliteal space or Hunter's canal, where the vessel lies at some distance from the surface.

It can scarcely then, I think, be doubted, that aneurism in an

extremity may be so far cured that it can neither enlarge again nor give way, although the blood continues to pass through the artery from which it springs, and an impulse continues to be felt at the part, owing to the pulsation of the artery being communicated to the sac. In the present case, there was an interval of above four years between the discontinuance of compression and the death of the patient, during which time, although the pulsation continued, the patient was able to follow a laborious employment, and never suffered the slightest inconvenience from the aneurism. Indeed, it is not improbable that the femoral artery has been unnecessarily tied in some cases, at least under similar circumstances, where, if a little delay had been permitted, it would have been found that the aneurism had no disposition to increase in size.

Before dismissing this subject, I may allude to a strange admission made by an Edinburgh reviewer in a notice of Mr. Tufnell's work and mine, in the July number of the *Edinburgh Medical and Surgical Journal.* The writer confesses to be unable to comprehend the distinction between the process by which the deposition of fibrine and the formation of a coagulum in an aneurismal sac take place.

"There is a strong temptation (the writer says, p. 227) to ask what is the difference between causing the coagulation of the contents of an aneurismal sac and the deposition of fibrine within the sac? Is fibrine deposited without coagulation? Is not the deposition of fibrine a species of coagulation? If coagulation take place, is fibrine not deposited? We must admit our inability to perceive the distinction here attempted to be made. If the contents of an aneurism are coagulated, we think that the deposition of fibrine has either already taken place, or must speedily follow. All this, nevertheless, we submit in deference to Dr. Bellingham, who, probably, has some mode of showing the difference between the two processes."

I should have thought that no one who had had the opportunity of examining cases of aortal aneurism could have failed to perceive the difference between the laminæ of fibrine which line the interior of the sac and the loose coagula of blood which occupy its center; or could have supposed that there was any analogy between the processes by which they are developed; the former being the result of a vital process which had been carried on during the patient's life, the latter a mere post-mortem occurrence, the result of the stagnation of the blood after the circulation has ceased.

Indeed, I do not believe that pressure upon the artery leading to an aneurism by the instruments ordinarily in use can cause the coagulation of its contents; and when coagulated blood is found in the sac after death, I look upon it as a post-mortem appearance. But if we had no other evidence, the preparations upon the table prove that the deposition of fibrine in an aneurismal

sac will be brought about by applying compression to the artery above. We know, too, that when this deposition of fibrine begins to take place, the sac, which before was readily emptied of its contents, and became flaccid when compression was made upon the artery above, now no longer does so, while its outline becomes distinct. We know, likewise, that this desirable result may ensue within a few hours from the commencement of the treatment, and that when it does occur it is a most favorable sign, as it indicates that the process by which the aneurism is to be cured has been set up in it.

It is not necessary to delay further upon this point; I have alluded to it, because I believe the writer in the *Edinburgh Medical and Surgical Journal* is by no means singular in his opinion; as the two substances, fibrine and coagulated blood, although so unlike one another in appearance, are continually confounded under the same name, and much inconvenience necessarily is the result of such a loose nomenclature.

The preparation from the opposite limb of this patient, in which the aneurism had been cured, is also of some interest, as being an additional example of the subsequent changes which ensue after the cure by compression, by which Nature effectually prevents the recurrence of aneurism at the same part of the vessel; as well as because it shows in some degree within what period these changes are brought about. The treatment of the aneurism in this limb was, as I have remarked, rather tedious, extending over a period of three months; after the cure, the site of the aneurismal sac was marked by a very solid hard tumor, resembling a racket-ball in shape and feel—a proof that the sac was filled with solid fibrine. About three years subsequently, upon a careful examination of the limb, no trace of this tumor remained; and now, after four years, we find that the aneurismal sac and the fibrine with which it was filled, have been entirely absorbed, and merely a solid ligamentous cord marks the site of the obliterated popliteal artery and aneurismal sac.

The last point illustrated by this preparation to which I wish to call attention is the condition of the femoral vein. It will be seen that this vein, throughout its whole course in the thigh, as well at the points at which the compression had been made, as at those where no pressure had been applied, preserves its natural healthy appearance; its valves are sound, there is no thickening of its coats, and no alteration of any kind is perceptible either upon its exterior or in its interior. Now, the treatment of the aneurism in this limb extended, as I have said, over a period of about three months, viz., from the middle of October to the middle of January; and during much of that time the pressure was made upon the middle and lower third of the thigh, where the artery and vein are very closely united, and the latter was of course necessarily compressed with the former.

It has been gravely proposed that in using pressure for the cure of aneurism, the pad of the compressing instrument should

be so applied as to avoid making pressure on the femoral vein; any one, however, who has dissected the parts, must know that this would be utterly impracticable, and every one who has tied the femoral artery knows that one of the chief difficulties in the operation consists in avoiding injury to the vein in consequence of its close proximity to the artery; indeed, Mr. Porter has shown that, in cases of popliteal aneurism, "the femoral vein is always more closely adherent to the artery than in the healthy subject;" and this is evidently the case in the preparation before us.

I have myself had the opportunity of examining the condition of the femoral vein after the cure of popliteal or femoral aneurism by compression in several instances in addition to the present; and in none did this vein present the slightest change, proving that it bears pressure equally as well as the artery, and that if the treatment is properly conducted neither vessel can suffer any injury from the compressing instruments.

In a paper which I read before the Society on a former occasion, I gave a list of the cases of aneurism which had been treated by compression up to the date of that communication. As it may not be without interest to follow up this subject, I have drawn up the following table of the cases that have been published, where this method of treatment has proved successful, commencing with the case of popliteal aneurism treated by Dr. Hutton in the Richmond Hospital in October, 1842, and bringing it down to the present day; distinguishing the cases according to the situation of the aneurism, and giving under separate heads the age, sex and occupation of the patient, the name of the hospital or other locality where the treatment was conducted, the name of the surgeon who had the management of the case, and of the journal in which it was published, with the result, and occasional observations.

It will be seen that the following table includes fifty-four cases of popliteal and femoral aneurism, viz., forty of popliteal, and fourteen of femoral; three cases of brachial aneurism, and four of radial or ulnar aneurism. I have not admitted any case into this list where the patient was not *cured*, and did not live for some years afterwards. I am aware that it does not include every case which has occurred during the period in question, as some have not been published, and perhaps a few others have escaped my notice, or have appeared in journals to which I had not access.

Mr. Tufnell observed, that the value of compression as a means of curing aneurism was well illustrated by the interesting case narrated by Dr. Bellingham. During the progress of the treatment, he had frequent opportunities of seeing the patient; and the conclusion he drew from the case was, that it afforded an additional assurance to the surgeon that, although he might sometimes be foiled for a while in treating aneurism by compression, yet he would not on that account be obliged to resort at once to the ligature, unless the sac of the aneurism manifested a disposition to increase.

List of Cases of Popliteal Aneurism successfully

No.	Surgeon's Name.	Sex.	Age.	Occupation.	Where treated.
1	Hutton.	Male.	30	Laborer.	Richmond Hospital.
2	Cusack.	Male.	55	Tanner.	Steevens' Hospital.
3	Bellingham.	Male.	32	Servant.	St. Vincent's Hospital.
4	Harrison.	Male.	29	Carpenter.	Jervis-street Hospital.
5	Kirby.	Male.	28	Baker.	" " "
6	Allan.	Male.	32	Seaman.	Haslar Hospital.
7	Cusack.	Male.	26	Gentleman.	At patient's residence.
8	Greatrex.	Male.	27	Soldier.	Regimental Hospital.
9	Porter.	Male.	29	Tailor.	Meath Hospital.
10	Porter.	Male.	20	Medical man.	" "
11	Jolley.	Male.	38	Laborer.	Torbay Dispensary.
12	Ferrall.	Male.	32	"	St. Vincent's Hospital.
13	Macdonnell.	Male.	32	"	Richmond Hospital.
14	Dartnell.	Male.	38	Soldier.	General Hospital, Fort Pitt.
15	Cusack.	Male.	33	Medical man.	Steevens' Hospital.
16	Humfrey.	Male.	43	Soldier.	Mil. Infirmary, Phœnix Park.
17	Storks.	Male.	32	Tailor.	At patient's residence.
18	Ferrall.	Male.	37	"	St. Vincent's Hospital.
19	Storks.	Male.	24	Brewer.	At patient's residence.
20	O'Brien.	Male.	34	Butcher.	Adelaide Hospital.
21	Armstrong.	Male.	26	Sailor.	Naval Hospital, Plymouth.
22	Tufnell.	Male.	27	Sawyer.	At patient's residence.
23	Cusack.	Male.	30	"	Steevens' Hospital.
24	Tufnell.	Male.	28	"	At patient's residence.
25	Hutton.	Male.	32	"	" "
26	Banon.	Male.	27	Laborer.	Jervis-street Hospital.
27	Bellingham.	Male.	44	"	St. Vincent's Hospital.
28	Rodgers.	Male.	47	Sailor.	New-York Hospital.
29	Mütter.	Male.	41	Bookkeeper.	" "
30	Knight.	Male.	48	" "	" "
31	Hosack.	Male.	55	" "	" "
32	Paget.	Male.	27	Surgeon.	" "
33	Thompson.	Male.	30	Boatman.	Tyrone Infirmary.
34	Ward.	Male.	45	Lighterman.	London Hospital.

treated by Compression, between 1842 *and* 1851.

Where reported.	Result.	Observations.
Dublin Medical Press.	Cured.	
" " "	Cured.	
" " "	Cured.	This patient subsequently labored under femoral aneurism in the opposite limb, which was also cured by compression. He died of aortal aneurism.
Reporter British Association.	Cured.	
Dublin Medical Press.	Cured.	
Lancet.	Cured.	
Dublin Medical Press.	Cured.	This patient has since died of cerebral disease.
Proc. Medico-Chirurgical Society.	Cured.	
Dublin Quarterly Journal.	Cured.	
" " "	Cured.	This patient died subsequently of aortal aneurism.
Provincial Medical Journal.	Cured.	
Dublin Hospital Gazette.	Cured.	
Dublin Medical Press.	Cured.	This patient had been operated on some years previously for popliteal aneurism in the opposite limb.
London Medical Gazette.	Cured.	
Dublin Quarterly Journal.	Cured.	
Dublin Medical Press.	Cured.	
Lancet.	Cured.	
Dublin Quarterly Journal.	Cured.	
Lancet.	Cured.	
Dublin Medical Press.	Cured.	This patient had aneurism in the opposite limb, and has died since of aortal aneurism.
Lancet.	Cured.	In this case the compression was made directly upon the aneurismal sac.
Dublin Medical Press.	Cured.	
Dublin Quarterly Journal.	Cured.	
Dublin Medical Press.	Cured.	Nos. 22 and 24 refer to the same patient; he subsequently labored under femoral aneurism, which was also cured by compression.
" " "	Cured.	In this case compression was made for seven hours and a half, when the pulsation ceased.
" " "	Cured.	
Proc. Medico-Chirurgical Society.	Cured.	In this case the pulsation ceased after compression had been maintained for twenty-three hours.
Trans. Amer. Med. Association.	Cured.	
" " " "	Cured.	
" " " "	Cured.	The compression was made in this case by the fingers of relays of assistants.
New-York Journal.	Cured.	In this case the artery had been tied some time previously, but pulsation had returned in the sac.
London Medical Gazette.	Cured.	
Medical Times.	Cured.	
Lancet.	Cured.	

List of Cases of Popliteal Aneurism successfully

No.	Surgeon's Name.	Sex.	Age.	Occupation.	Where treated.
35	Bennett.	Male.	30	Blacksmith.	London Hospital.
36	Wood.	Male.	33	Carman.	Bellevue Hospital.
37	Wood.	Male.	30	Carpenter.	" "
38	Humphrey.	Male.	24	Sailor.	Addenbrooke's Hospital.
39	Allan.	Male.	27	Pensioner.	Naval Hospital, Haslar.
40	Ward.	Male.	36	Ostler.	Huntingdonshire Infirmary.

List of Cases of Femoral Aneurism successfully

1	Liston.	Male.	30	Tinworker.	University College Hospital.
2	Liston.	Male.	53	"	" " "
3	Bellingham.	Male.	33	Servant.	St. Vincent's Hospital.
4	Mackern.	Male.	30	Master of canal boat.	" "
5	Humfrey.	Male.	31	Soldier.	Mil. Infirmary, Phœnix Park.
6	Smyley.	Male.	48	Schoolmaster.	Meath Hospital.
7	Tufnell.	Male.	29	Sawyer.	City of Dublin Hospital.
8	Colles.	Male.	29	Glassblower.	Steevens' Hospital.
9	Hargrave.	Female.	23	Dressmaker.	City of Dublin Hospital.
10	Watson.	Female.	38	"	New-York Hospital.
11	Parratt.	Male.	38	Soldier.	Ord. Hospital, Woolwich.
12	Briscoe.	Male.	22	"	" " "
13	Watson.	Male.	30	Farmer.	New-York Hospital.
14	Dartnell.	Male.	35	Soldier.	Regt. Hospital, Chatham.

List of Cases of Brachial Aneurism

1	Cusack.	Female.	40	Farm servant.	Steevens' Hospital.
2	Hutton.	Male.	34	" "	Richmond Hospital.
3	Johnston.	Male.	34	Blacksmith.	" "

List of Cases of Radial or Ulnar Aneurism

1	Crampton.	Male.	11	Blacksmith.	At patient's residence.
2	Syme.	Male.	30	"	" "
3	Velpeau.	Male.	30	Coachguard.	La Charité.
4	Hewett.	Male.	30	" "	St. George's Hospital.

treated by Compression, between 1842 *and* 1851.

Where reported.	Result.	Observations.
New-York Journal.	Cured.	In this case the pressure was made directly upon the tumor.
" "	Cured.	
" "	Cured.	
Provincial Medical Journal.	Cured.	In this case the pulsation ceased after compression had been maintained for fifteen hours.
Lancet.	Cured.	
Provincial Medical Journal.	Cured.	

treated by Compression, between 1842 *and* 1851.

Lancet.	Cured.	
"	Cured.	
Dublin Medical Press.	Cured.	This patient, who labored under popliteal aneurism in the opposite limb, which was likewise cured by compression, died subsequently of aortal aneurism.
Lancet.	Cured.	
Dublin Medical Press.	Cured.	
" " "	Cured.	This patient died suddenly three years afterwards, probably of internal aneurism.
Treatise on compression.	Cured.	This patient labored under popliteal aneurism in both limbs previously, which had been cured by compression.
Dublin Quarterly Journal.	Cured.	
" " "	Cured.	
Trans. Amer. Medical Association.	Cured.	
Lancet.	Cured.	
"	Cured.	
New-York Journal.	Cured.	
Medical Times.	Cured.	

successfully treated by Compression.

Treatise on compression by Mr. Tufnell.	Cured.	Traumatic aneurism from gunshot wound.
Dublin Medical Press.	Cured.	Traumatic aneurism from wound in venesection.
American Medical Journal.	Cured.	Traumatic aneurism from wound in venesection.

successfully treated by Compression.

Dublin Medical Press.	Cured.	Traumatic aneurism of the radial from wound.
Edinburgh Monthly Journal.	Cured.	Non-traumatic aneurism of the radial.
Gazette des Hôpitaux.	Cured.	Traumatic aneurism of the radial from wound.
Proc. Medico-Chirurgical Society.	Cured.	Traumatic aneurism of the ulnar, the result of a wound.

PART FOURTH.

COMMUNICATIONS AND

AMERICAN MEDICAL RETROSPECT.

On the claims of Priority in the Exsection and Disarticulation of the Lower Jaw. By GEORGE C. BLACKMAN, M. D., Fellow of the Royal Medical and Chirurgical Society of London.

Although nearly half a century has passed since Dr. Deadrick, of Tennessee, excised a portion of the lower jaw, and though some twenty-one years have elapsed since the publication of its details, in one of the leading medical Journals of this country, we observe that surgical writers are still almost constantly guilty of misstatements whenever they attempt to give the history of this operation. We believe that no surgeon on the continent of Europe has ever done justice to the claims of Dr. Deadrick, but in Great Britain they have, at least, been most honorably acknowledged. (Vid. SOUTH's CHELIUS, vol. iii. p. 745.) The profession in this country have doubtless seen with surprise the attempt lately made by an *American Professor of Surgery*, to surrender the honor so justly due to *American* surgery. We think this *Professor* would blush to own his ignorance of the existence of such a publication as the "*American Medical Recorder*," and we know not what apology he can offer for the erroneous statements contained in the following extract from his report of an operation which he performed, for the removal of the *entire* lower jaw, published in the January number of the *New-York Journal of Medicine:*

"To Dupuytren was reserved the glory of having, in 1812, first removed, by a methodical operation, a portion of the body of the inferior maxilla; *but since the innovation of the celebrated French surgeon*, (the italics are our own,) the operation for the partial exsection of this bone has been repeatedly performed."

Now, we would respectfully ask the author of the above, why was not the operation of Dr. Deadrick, in 1810, "a methodical operation?" *Perhaps*, however, Prof. Carnochan has never seen Dr. Deadrick's report of it in the *American Medical Recorder* for July, 1823, vol. vi. p. 516; and for his benefit, as well as for those who are denied the privilege of consulting the pages of that journal, we will insert in this place that portion of it which is descriptive of the operation. The disease for which it was performed had invaded almost entirely the left side of the inferior maxillary bone. Internally it occupied nearly the whole of the mouth, and for three weeks previously, the patient experienced great difficulty in swallowing, and occasionally was almost suffocated during sleep. Externally, the tumor had the appearance of a wen of considerable size, &c., &c. The account of the operation we give in his own words:

"An incision was commenced under the zygomatic process, and continued on the tumor, in the direction of the bone, to nearly an inch beyond the centre of the chin. A second incision was begun about midway, at right angles with the first, and extending a short distance down the neck. The integuments were now separated from their connection with the tumor, &c., and the bone was sawed off immediately at the angle and centre of the chin. I saw nothing of the parotid or sub-maxillary glands; they probably shared the fate of the teeth. [Dr. D. states in another part of his paper that he presumed the pressure of the tumor occasioned their absorption.] The wound was united in the usual manner, and the boy had a speedy and happy recovery. The tumor was cartilaginous, and on being cut exhibited a surface as white and smooth as polished ivory."

Thirteen years afterwards this patient was in excellent health. This certainly looks very much like "a methodical operation," and one would have supposed that, with such facts within his reach, an American Professor would have been slow to yield to a foreigner the credit so justly due to one of his own countrymen. That Dr. Deadrick is entitled to this credit will be more apparent after perusing the account of Dupuytren's first operation. We believe that the earliest notice of this is to be found in the *Thesis* sustained by Lisfranc on the 26th Aug, 1813, before the Faculty of Medicine in Paris. The 29th Vol. of the "*Dic. des Scien. Med.*" was published in 1818, and at page 432 may be found an extract descriptive of the operation taken from the above *Thesis*, by F. Ribes, to whom was entrusted the article on the "*Machoire.*" The details given by Lisfranc, who was present at the operation,

in his *Thesis* and in his "*Precis de Medecine Operatoire*," vol. ii. p. 419, as well as that contained in the "*Leçons Orales*," vol. iv. p. 628, differ in no material respect from the statements made by Dupuytren in a clinical lecture "On Amputations and Resection of the Lower Jaw," delivered at the *Hotel Dieu* during the session of 1833. This lecture was revised by the Baron himself previous to its publication in the *Lond. Lancet* for 1833, '34, vol. i. p. 56. As its accuracy, therefore, cannot be questioned, we hesitate not to quote from it, premising, however, that the disease which gave rise to the necessity for the operation was of a cancerous nature.

"An incision was now made through the middle of the lip nearly down to the os hyoides; the two flaps were then dissected off on either side from the tumor; the labial arteries, lying in the substance of the muscles, were easily avoided, and the flaps being held on one side by an assistant, room was obtained to divide the periosteum. When the bone was sufficiently exposed, it was divided on either side with a common saw, at about an inch from its angles. Up to this period of the operation only a few drops of blood were lost; but when the muscles attached to the genoid process, and along the mylo-hyoidean line, were divided by a curved knife, certain arteries, which had become enlarged in consequence of the disease, were necessarily cut through; however, the hemorrhage was not so violent as we had expected; the fingers of the operator and an assistant, placed on the submental and lingual branches, suspended the effusion of blood, and the carcinomatous tumor with the bone was removed. The parts removed weighed a pound and a half. The bone was affected with exostosis, caries, necrosis, and was softened in several places. Twenty-one years afterwards the patient (M. Lesier) was in good health."

Why this, more than that of Dr. Deadrick, was "a methodical operation," we confess our inability to discover. As such it is acknowledged by British writers on surgery, as the following observations of Mr. South, *Op. Cit.*, 745, will prove.

"As will be presently seen, Deadrick was the first who, in 1810, cut away the side of the lower jaw," &c.; and again, at page 748, he remarks: "Deadrick, of Rogersville, Tennessee, is justly entitled to the merit of having first, in 1810, amputated a portion of the jaw of a child of fourteen, who had a tumor occupying the left side of the lower jaw."

Mr. Stanley, in his *Treatise on the Diseases of the Bones*, p. 278, (Lond. ed.,) remarks, that Mr. Anthony White, in 1804, excised a part of the lower jaw, and Mr. Samuel Cooper, in his *Dictionary of Surgery*, alludes to the same operation. In consequence of this,

Mr. South was induced to inquire of Mr. White himself the particulars of his case, from which it appears his operation was not performed in 1804, but in 1816. (*Op. Cit.*, vol. ii. p. 750.) This case, in which the jaw was removed from the articulation, in its nature and result, corresponds more nearly with one of the cases in which the writer has disarticulated than any we have found on record.

Baron Percy removed a portion of the lower jaw, affected with caries, some time during the latter part of the last century. That it was not, however, properly "a methodical operation," the following extract, we think, conclusively shows:

"De 1779 à 1784, Percy fit avec succes plusieurs opérations neuves et hardies. Il emporta presque tout le centre d'une mâchoire inférieure profondèment cariée, et dans ce grand dèlabrement il ménagea à la plupart des dents, flottantes et sans appui, les moyens de se consolider; bien que dépourvues d'alvéoles et de vaisseaux; et aux parties molles, convenablement rapprochèes, les moyens de reprendre leur forme et en quelque façon, leur consistance première. Un mois suffit pour réparer ces ruines; tant sont promptes les ressources de la vie lorsqu' elle les dèploie avec liberté!" (*Hist. des Memb. de l'Acad. de Med. ou Recueil des Eloges.* Eloge de M. le Baron Percy, par E. Pariset, tom. prem. p. 282.)

In 1818, we learn from the *Leçons Orales*, vol. iv. p. 669, that Baron Percy *proposed* to resect the ends of the bone in a case of ununited fracture of the lower jaw, but as the case presented some peculiar difficulties, he transferred it to Dupuytren.

If we go back to the last century we find that an *American* surgeon, Mr. Walker, in 1760, removed for *necrosis* the *entire* lower jaw, except the chin. Some particulars of this case may be found in the *Mem. de l'Acad. Roy. de Chir.* tom. v. p. 366. The parts removed were placed in the possession of Mr. Else, Surgeon of St. Thomas's Hospital, London, who forwarded them to M. Chopart, in Paris.

We do not claim for this the title of "a methodical operation" in the modern acceptation of the term, the first of the kind having been performed, as we think we have conclusively shown, by Dr. Deadrick, in 1810, two years before that of the celebrated French surgeon. The following *panegyric*, therefore, *with a change of names only*, applies more properly to *another!*

"Quel nom donner à l'homme auquel l'humanité est redevable d'un si grand bienfait? Or hâtons nous de la proclamer hautement ici, à la gloire de son auteur, à le gloire de la chirurgie Fran-

çaise (*Américaine*)! C'est en France (*Tennessee,*) c'est à Paris (*Rogersville,*) par notre célébre professeur M. Dupuytren (*Dr. Deadrick,*) qu' a été conçue et exécutée pour la prèmier fois, en 1812 (1810,) cette admirable operation." (*Lec. Oral.* tom. iv. p. 669.)

Having substantiated the claims of American surgery to "the glory" of *priority* in exsecting, by "a methodical operation," a *portion* of the lower jaw, let us now examine some of the recorded facts which relate to the amputation of the *entire* inferior maxilla.

Prof. Carnochan, in the report to which we have already alluded, made the following statement:

"In the annals of surgery there is an *allusion* made to the amputation of the *entire* lower jaw by Walther, of Bonn, but I have not been able to trace the truth of it to an official source. The following case (his own) will prove that this operation can be performed with success," &c., &c.

From the above it is evident that Prof. Carnochan would have the reader believe that the authenticity of Walther's case, being, in his opinion, somewhat doubtful, his own operation must be the first that can be traced to what he denominates "an official source." Not knowing the precise meaning which he attaches to this phrase, we may fail in convincing him, that, even if Walther never did excise the entire bone, his own claims to priority in this respect are totally unfounded. However, we will present a few facts for his consideration, of the value of which he, as well as the reader, can form their own estimate.

In the *Annali Universali di Medicini*, for April, May, June, 1843, is reported a case in which Dr. Signoroni, of Padua, successfully removed the *entire* lower jaw for *osteo-sarcoma*. The date of the operation is not given, but it is stated that the patient, in perfect health, was exhibited to the Medical Congress of Padua, on the 27th Sept., 1842. For further particulars, see *Gazette Medicale* for Nov., 1844, p. 758; *Edinburgh Med. and Surg. Journal*, vol. i. 1844, p. 235; and *Philadelphia Med. Exam.*, vol. vii. 1844, p. 96.

In Prof. Syme's "*Contributions to the Pathology and Practice of Surgery*," published in 1848, at page 21, is a case recorded in which for osteo-sarcoma the professor removed the *entire* lower jaw. Matters progressed favorably after the operation until the next day, when the patient died suddenly, probably from suffocation produced by the retraction of the tongue.

One word in reference to the "allusions" made to Walther's case "in the annals of surgery." Are they such as to afford us

good reasons for *rejecting* his reported operation? The earliest notice we have been able to find of this case is in the *Archives Generales de Medecine*, vol. xi. p. 466, and not the *second* volume, as stated in Mott's Velpeau, vol. ii. p. 713. In the report of the proceedings of the Royal Academy of Medicine, for the 15th June, 1826, contained in this volume, we learn that M. Lisfranc laid before the Sect. de Chirurg. a case of *partial* exsection of the lower jaw by Gensoul, of Lyons, and that of the *entire* amputation by Walther, of Bonn. Lisfranc remarked that Walther tied both primitive carotids as a preliminary step in the operation. This report, it will be observed, was made in June, 1826, and in his "*Precis de Medecine Operatoire*," published in 1846, Lisfranc repeats the same statement, adding, moreover, that Gräefe, of Berlin, had successfully performed the same operation, (*vide* vol. ii. p. 464.) Now, if we reject Lisfranc as an authority, "an official source," what becomes of Dupuytren's first operation in 1812? For the particulars of this we certainly are principally indebted to M. Lisfranc, for no one can deny that until the publication in the *London Lancet* of Dupuytren's clinical lecture, from which we have quoted, he was our only authority on this subject.

Velpeau, in a "Note sur quelques observations recuilliés à la Clinique Chirurgicale de M. I. Cloquet (Hosp. de Perfect,") in the *Archiv. Gen.*, vol. xiv., precedes his description of a formidable operation on the lower jaw, by M. Cloquet, with the following remarks, after alluding also to the operations of Mott, Gräefe, Cusack, Gensoul, &c.: "Il y a plus, c'est que M. Walther est allé jusqu' à faire l'énlévement complet d'os maxillaire; en consequence ce n'est plus une operation extraordinaire que celle dont je veux parler en ce moment."

Dupuytren also makes the following "allusion" to the case in question, in the clinical lecture to which we have before referred. "But the boldness of surgeons did not stop here; it is reported (*Arch. Gen. de Med.* tom. xiv.) that Walther and after him Gräefe (*Journ. Hebdom.* t. 4) have removed the whole of the lower maxillary bone, by disarticulating it on both sides. Walther had previously tied both carotid arteries. These facts appear almost incredible, and it is difficult to imagine how the patient could survive such formidable operations." (*Lond. Lancet*, vol. i. 1833–34, p. 61.)

Malgaigne, in the first edition of his "Medecine Operatoire," published in 1834, gives to Walther the credit of having ampu-

tated the *entire* lower jaw, and in all subsequent editions he permits the same assertion to remain unchanged.

In the magnificent work of Bourgery & Jacob, published in 1837, we find it stated in the chapter on "Exsections of the Bones," that Walther had successfully removed the whole inferior maxilla.

Dr. Martell Frank, in his "*Systematisches Lehrbuck der gesammten Chirurgie*," published at Ehrlangen in 1851, (*Sweiter Band, Erste Abtheilung*, p. 167,) thus remarks: "Ph. V. Walther hat diese operation zuerst ausgeführt."

Dr. Weber, a son of the celebrated Prof. of Anatomy in the University of Bonn, and nephew of *Walther*, is at present residing in New-York. He informs us that his uncle *did perform* the operation which Prof. Carnochan cannot trace to "an official source!" True, others have considered Walther's case somewhat doubtful, as they could scarcely credit the fact that there *could be* sufficient disease of the bone, *without materially involving the soft parts*, to warrant so serious an operation. For example, Sedillot, in his "Traité de Medecine Operatoire," p. 384, inquires, in reference to this case, "*Comment s'expliquér une maladie de la totalité de la machoire sans alteration des parties molles?*" &c., &c. Prof. Carnochan, however, must consider this circumstance as of little weight, for if the veracity of the operator is to be questioned on such grounds, his own may hereafter suffer from the same cause!

Prof. Carnochan's operation was for *necrosis*, and in the "annals of surgery" it is not difficult to find the record of several cases in which the *entire* lower jaw has been removed for this disease. Perhaps the case in which Dr. Geo. M'Clellan extracted the whole bone (vid. *Principles and Practice of Surgery*) may not be admitted among "the methodical" operations, but we do not see how this title can be denied to that performed by Mr. Perry, which is reported at page 292, in the 21st vol. of the *Transactions of the Royal Medical and Chirurgical Society of London*. Mr. Perry has given an excellent plate representing the parts removed, and which include the *entire* bone. He does not inform us whether it was taken before or "after maceration." A very interesting question may arise in the minds of those who will take the trouble to compare the plates in the January number of the *N. Y. Journal of Medicine*, showing the parts "after maceration," with that given by Mr. Perry in the volume to which we have alluded. This question it is not our intention at present to discuss,

and we will only add on this point, that we think many with ourselves would gladly have dispensed with plate *No.* 2, for one which represented the parts before the operation!

Prof. Carnochan asserts that his operation proves that the lower jaw may be entirely removed with success, &c., &c. We have already shown that to Prof. Carnochan was not reserved "the glory" of having first furnished this proof. The case in which Mr. Spence completed the extirpation of the *entire* bone except the chin, (vid. *Ed. Med. Surg. Jour.*, Apr., 1843,) together with the terrible operations for *Osteo-Sarcoma*, performed by Mr. O'Shaughnessy, (*Brit. For. Med. Rev.*, July, 1845;) by Lisfranc, (*Prec. de Med. Op.*, vol. ii., p. 453;) by Prof. Syme, (*Cont. to Path. and Pract. of Surg.*, pp. 14, 15;) by Dieffenbach, (*Die Operative Chirurgie; Zweite Band*, p. 64;) in which cases *nearly* all was removed, proved, in our humble opinion, far more than does the operation of Prof. Carnochan, that in those really demanding it, the entire bone might be amputated.

These were cases in which it must truly have been, in the language of Dieffenbach, a "*kuhnsten und blutigsten operationen*," and which required "*von seiten des Kranken die grösste Hingebung, von seiten des Chirurgen die grösste Gewandheit, Kuhnheit und Fassung.*" No one will question the boldness and skill of the distinguished surgeon from whom we have just quoted, but we doubt whether success obtained in cases like those in which Dr. M'Clellan, Mr. Perry or Prof. Carnochan operated, would have emboldened the German surgeon to attempt the extirpation, *at once*, of the enormous growth so graphically described at p. 64, (*Op. Cit.*,) and in the accomplishment of which, with all his daring, he thought it expedient to resort to three different operations. The same observations apply to the cases of Prof. Syme, Mr. O'Shaughnessy and M. Lisfranc. In the first of these the parts removed weighed 4½ pounds, in the second they were as large as a child's head, and in the third they were of very great magnitude. We believe we express the sentiments of the majority of surgeons, when we assert that the success which followed the operations of Dr. M'Clellan, Mr. Perry and Prof. Carnochan, under the peculiar circumstances of these cases, affords but a feeble criterion of what we might expect were we about to encounter cases of such frightful character as those to which we have referred, and in which the extent of the disease might require the removal of the *entire* bone.

Poisoning with Oil of Tansy. By JOHN C. DALTON, M. D.—The last number of the *Amer. Jour. of Med. Sci.* contains a report of a case of poisoning with oil of tansy. A healthy looking girl, aged twenty-one years, for the purpose of procuring abortion at about the fourth, took one ounce and three drachms of the oil. In fifteen minutes after swallowing it she was seized with violent convulsions; total unconsciousness; cheeks flushed, of a bright red color; eyes open and very brilliant; pupils of equal size, widely dilated and immovable; sclerotics injected; skin warm; respiration hurried, labored and stertorous, and obstructed by an abundance of frothy mucus, which filled the air-passages, and was blown from between the lips in expiration; the breath had a strong odor of tansy. At intervals of from five to ten minutes the convulsions recurred, in which the head was thrown back, the respiration suspended, the arms raised and kept rigidly extended, and the fingers contracted—this state continued for about half a minute, and was succeeded by a tremulous motion, often sufficient to shake the room, together with very faint and imperfect attempts at inspiration. She died in three hours and a half after taking the poison. The mucous membrane of the stomach was found pale, not vascular in any part, but throughout nearly the whole of the greater pouch, brownish and much thinned and softened, so that for a considerable space it was nearly or quite destroyed. Portions of the oil were found in the stomach. The uterus contained a well-formed female fœtus, about four months old.

Case of Ovariotomy. By EZRA P. BENNETT, M. D., of Danbury, Conn.—[Communicated in a letter to the *Amer. Jour. of the Med. Sci.*]—DEAR SIR: I operated, a short time since, for ovarian dropsy, on a Mrs. B., of Redding, Conn. The patient was 52 years of age, was married, and had two children. She had usually enjoyed good health until about two years since, when she became somewhat indisposed, but not so much so as to compel her to desist from her household duties. In the spring of the present year she consulted me, when I detected a tumor immediately above the pubis, about half the size of the head of a new-born child. It was in the median line, grew rapidly, and soon fluctuated; she was tapped, I think, as early as March, by her attending physician, Dr. Gorham, twice within five or six weeks; the fluid was albuminous. I removed the tumor in June. It was adherent to the walls of the abdomen over a space about the size of the palm of the hand; no other adhesions. The wound appeared to do well. No appearance of inflammation within the abdomen; but she died from exhaustion on the fourth day. The operation was performed under the influence of chloroform. The sac was large, capable of containing a pail full, and was eminently multilocular; her age was against her; the operation was too long delayed; the fluid being albuminous, the restorative powers of the constitution were destroyed. I have not thought it necessary to go into the minutiæ of the case.

Extirpation of more than half the Lower Jaw, for a Cancerous Degeneration. By Prof. F. H. Hamilton, M. D.

D. C. Hooper, aged 49 years, was admitted into Buffalo hospital, as a private patient, January 24, 1851. In 1844, he first discovered a small movable tumor under the right ramus of the lower jaw. One year since a cancer doctor cauterized it, and destroyed the tumor with some of the adjacent structure. The wound thus made healed slowly, and left new indurations, which rapidly extended, and the bone became involved. The disease at the time of the operation, implicated the whole right half of the inferior maxilla, and much of the neighboring soft parts. His health was good.

Operation.—Jan. 25, 1851. Patient under the influence of chloroform. An incision was made from near the glenoid cavity, along the descending and horizontal ramus of the symphysis. This incision was intersected by a second, commencing at the angle of the mouth, and terminating at the angle of the jaw. The flaps thus made being lifted, the bone was separated about five lines to the left of the symphysis, with a chain saw, and the condyle was then removed from its socket. The operation was not commenced with the expectation of removing so large a portion of the jaw, but, on exposure, and having tried it with a knife, it was found diseased in its cancelli, from the socket to the symphysis. The soft parts were also largely involved both within and without the mouth. As effectually as possible the whole was cleared away. Three vessels only required the ligature. The wound was closed with sutures. The wound granulated and continued to heal steadily until the 22d of February. An opening of half an inch in diameter still existed, through which healthy matter was discharged; his strength was such that he sat up a considerable portion of the day; his appetite was good, and a favorable issue seemed probable if not certain. On the morning of the 22d he arose as usual to take his breakfast, and intending, after breakfast, to leave the hospital, when he was suddenly seized with a sensation of unusual prostration; he was laid upon the bed, and died in a few moments. No medical officer was called, and the body having been removed soon after, no autopsy was made. The cause of his death remains, therefore, unexplained.—*Buffalo Med. Jour.*

American Medical Association.—The fifth annual meeting of the American Medical Association, will be held at Richmond, Va., on Tuesday, May 4th, 1852.

All secretaries of societies, and of other bodies entitled to representation in this association, are requested to forward to the undersigned, correct lists of their respective delegations, as soon as they may be appointed.

The following is an extract from Art. II. of the Constitution:

"Each local society shall have the privilege of sending to the association one delegate for every ten of its regular resident members, and one for every additional fraction of more than half of this number. The faculty of every regularly constituted medical college or chartered school of medicine shall have the privilege of sending two delegates. The professional staff of every chartered or municipal hospital containing a hundred inmates or more, shall have the privilege of sending two delegates; and every other permanently organized medical institution of good standing shall have the privilege of sending one delegate."

The medical press of the United States is respectfully requested to copy.

P. CLAIBORNE GOOCH,
One of the Secretaries, Richmond, Va.

University Medical College.—The new arrangements in this college consists in the appointment of Prof. Valentine Mott, M. D., as Emeritus Professor of Surgery; and Dr. W. H. Van Buren Professor of Descriptive Anatomy, in the chair rendered vacant by the decease of Prof. Pattison. These arrangements it is believed will add much to the prosperity of the school.

OBITUARY.

Death of Samuel R. Smith, M. D.—At his residence on Staten Island, on the 24th Dec. last, of pneumonia, aged 50 years. He was a graduate of the College of Physicians and Surgeons of this city, and had practised his profession nearly twenty-five years. He was a beloved physician, and was taken to his grave amidst as general, deep and unaffected grief as is seldom ever witnessed.

Death of Sidney A. Doane, M. D.—In January last, at Quarantine, S. I., of typhus fever. Dr. Doane was a native of Boston, Mass. He graduated Doctor of Medicine at Harvard University, in 1828, soon after which he removed to this city. He had a great fondness for the literature of our profession, particularly for the French department of it, where his translations were extensive and varied. He was a man of great industry and perseverance, and as a physician, was honored and beloved by his patients and friends. He died in the discharge of his duties as Health Officer of the port of New-York. In our next number will appear a more extended notice of his professional life and character.

Death of F. F. Colton, M. D.—At the New-York Hospital, on the 23d of February, of typhus fever. He was a graduate of the College of Physicians and Surgeons of this city. He died in the discharge of duty as resident physician of the hospital. He was a young man of much promise in his profession. Many of our readers will remember his reports of cases published in the past numbers of this journal, which were among the first of his medical writings.

CONTENTS.—NO. III.

(NEW SERIES.)

PART I.—ORIGINAL COMMUNICATIONS.

ART. I.—Cases of maculated Typhus or Ship Fever; with suggestions of Treatment; being the result of a series of observations made during the prevalence of this disease at South Boston and Deer Island Hospitals, in 1847–48. By J. B. UPHAM, M. D., of Boston, - - - - - - 299

ART. II.—On Puerperal Fever; with Cases. By ROGER GRISWOLD PERKINS, M. D., of New-York, - - - - - 328

ART. III.—On the Communicability of the Cholera Asyhyxia. By JOHN W. STERLING, M. D., Assistant Physician of the Marine Hospital, Quarantine, N. Y., - - - - - 343

ART. IV.—Case of Concussion of the Brain. [Read before the Chenango County Medical Society, January 13th, 1852.] By WILLIAM D. PURPLE, M. D., - - - - - - 348

ART. V.—Fracture of the Pelvis—Compound Fracture of the Olecranon—Rupture of the Bladder. By JOHN O. STONE, M. D., Surgeon to Bellevue Hospital. Reported by A. P. DALRYMPLE, M. D., Assistant Surgeon, - - - - - 352

ART. VI.—Syncope from entrance of air into the Facial Vein. By MOSES GUNN, M. D., Professor of Anatomy and Surgery in the University of Michigan, - - - - - - 356

ART. VII.—Remarks on the Treatment of Typhoid Fever. By H. N. BENNETT, M. D., Bethel, Ct., - - - - - 357

ART. VIII.—Adulterated Medicines in the Country. By A. WILLARD, M. D., of Greene, New-York, - - - - 361

ART. IX.—Upon the Diseases of the Isthmus of Panama. By JOHN A. LIDELL, M. D., of New-York, - - - - 365

ART. X.—A Review of "Remarks and Recommendations on the Professional Education of Dentists, by JOHN TRENOR, M. D., Dentist of New-York." By AMOS WESTCOTT, M. D., Professor of Theory and Practice in the "New-York College of Dental Surgery," Syracuse, N. Y., - - - 381

PART II.—BIBLIOGRAPHICAL NOTICES.

ART. XI.—A Complete Treatise on Midwifery: or the Theory and Practice of Tokology, including the Diseases of Pregnancy, Labor, and the Puerperal State. By ALF. A. L. M. VELPEAU, M. D. Translated from the French. By CHAS. D. MEIGS, M. D., Professor of Midwifery in the Jefferson Medical College, etc., etc. Fourth American, with the additions of the last French Edition. By WM. BYRD PAGE, M. D., Lecturer on Obstetrics in the Philadelphia Medical Institute; Consulting Surgeon to the Philadelphia Hospital, Blockley, etc., etc. With Numerous Illustrations. Philadelphia: Lindsay and Blakiston. 1852. 8vo. pp. 652, - - - - - - - - - - - - 397

ART. XII.—Essays on Life, Sleep, Pain, etc. By SAMUEL HENRY DICKSON, M. D., Professor of Institutes and Practice of Medicine in the Medical College of the State of South Carolina. Philadelphia: Blanchard & Lea. 1852. 12mo. pp. 301, - - - - - - - - - 397

ART. XIII—A Treatise on the Anatomy, Physiology, and Diseases of the Human Ear. By JAMES BRYAN, M. D., Professor of Surgery in Geneva Medical College; Professor of Institutes of Medicine and Medical Jurisprudence in Philadelphia College of Medicine, etc. Philadelphia: Published by the Author. 1851. 12mo. pp. 124, - - - - 398

ART. XIV.—An Analysis of Physiology: Being a Condensed View of its important Facts and Doctrines, Designed especially for the use of Students. By JOHN J. REESE, M.

D., Lecturer on Materia Medica and Therapeutics in the Medical Institute of Philadelphia, etc., etc. Second Edition, revised and enlarged. Philadelphia: Lindsay and Blakiston. 1852. 12mo. pp. 368, - - - - - - - 398

ART. XV.—Elements of Chemistry. By THOMAS GRAHAM, F. R. S., Professor of Chemistry in University College, London, etc., etc. Second American, from an entirely revised and greatly enlarged English Edition. With numerous Illustrations. Edited with Notes. By ROBERT BRIDGES, M. D., Professor of Chemistry in the Philadelphia College of Pharmacy, etc., etc. Philadelphia: Blanchard & Lea. 1852. Part 1st, 480, pp. 430, - - - - - - 398

PART III.—FOREIGN MEDICAL RETROSPECT.

PATHOLOGY AND PRACTICAL MEDICINE.

On Albuminous Urine; and on so-called Chylous Urine, - 399
Vaccination Tested by the Experience of Half a Century, - 401
On the treatment of Erysipelas by Collodion and Castor Oil, - 403
On the Curative Treatment of Aneurism of the Aorta, - - 404
On Quinidine, - - - - - - - - - - - 405
Cure of Ascites and Hydrarthrosis by Iodureted Injections, - 406

MIDWIFERY.

On the Diagnosis and Treatment of Ovarian Diseases, with the History of one hundred and fifty-six Cases, - - - 408
On Healthy and Morbid Menstruation, - - - - - 410
Practical Observations and Statistics of Forceps Operations, - 413
A new mode of treatment for Prolapsus Uteri, - - - 415

PART IV.—AMERICAN MEDICAL RETROSPECT.

COMMUNICATIONS.

Remarks on Amputation of the Lower Jaw. By Prof. CARNOCHAN, - - - - - - - - - - - 416
Cases in Surgery. Trephining the Cranium and Ligature of the Carotids in Epilepsy. By Prof. PARKER, - - - 418

Microscopic Observations respecting Arterial and Capillary Circulation, - - - - - - - - - - - - 421
Punctured Wound of the Liver followed by Recovery, - - 423
Results of Treatment in Thirteen Cases of Pseudarthrosis, - 426

MISCELLANEA.

State Medical Society, - - - - - - - - - - 426
New-York Academy of Medicine, - - - - - - 427
New-Yorker Medicinische Monatsschrift, - - - - - 427
Canada Medical Journal, - - - - - - - - 427
East Tennessee Record of Medicine and Surgery, - - - 428
British American Medical and Physical Journal, - - - 428

OBITUARY.

Death of Dr. James H. Rogers, - - - - - - - 428
Death of Prof. W. R. Grant, - - - - - - - - 428
Death of Dr. W. P. Hort, - - - - - - - - 428
Death of Dr. A. J. Rand, - - - - - - - - 428

INDEX, - - - - - - - - - - - 429